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Closing Number of the Volume.

With the present number we conclude volume 6,—and in taking a retrospective view of its contents, and of the many evidences of kindness, and approbation which we have received from our patrons, we can but indulge in feelings of gratification and pride, that our efforts to subserve the agricultural interest—the great interest of the country—have been so successful, and that we have been sustained in a spirit of liberality alike flattering to us, and honorable to those for whom we have labored. Among those sources of pleasure which warm up the human heart, nerve the arm to generous exertion, and animate the mind to mental toil, there are none more cherished—none more worthy of being cherished—than that which springs from a consciousness that one's labors have been appreciated; that those labors were of a character to benefit our fellows, and directed to the improvement of the agricultural resources of the country, which are, at once the elements of national wealth and greatness, and of individual prosperity and happiness.

As we shall commence a *new volume* on the first day of next month, it has suggested itself to our mind, that the occasion would be a fitting one for our kind friends and patrons, to interest themselves with their friends and neighbors to augment our subscription list. We are sure that a very slight exertion on their part, while mingling in their social circles, would accomplish this desirable object, without in the least interfering with their business arrangements; and from the oft repeated favors which they have for years conferred upon us, we feel very sure, that they will take pleasure in using their friendly offices in our favor. Our list, thanks to our good patrons, is already large, is still increasing; but as we conceive it to be a duty, due as well to ourself as to the agriculture of the country, to still expand the sphere of the usefulnesss of our journal, we would, in a spirit of deference, intimate, that if each of our present subscribers would add another name to our subscription, its field of action would be greatly enlarged, and we should be enabled, through its pages, enriched, as they monthly are, with the productions of the most enlightened agricultural minds of the country, to still further advance and promote the welfare of husbandmen, by awakening their ambition, and arousing them to energetic exertion.

From the *high character of our correspondents, both as practical farmers, and as writers*, we may be permitted to say, that the ensuing volume will fully sustain the reputation gained and enjoyed by its predecessors; so that our friends will risk nothing in urging its claims to the support of their brother farmers and planters: and, as for ourself, we can pledge an industry that never flags, when in pursuit of noble ends—an industry that is only equalled by the zeal which impels it to energy, and clothes it with elasticity and strength.

Tendering to our indulgent and partial friends, the homage of the heart for past favors, and asking a continuance of them for the future, we crave the liberty of saying, that every additional subscriber they may obtain, will be adding so much power to the cause of agriculture.

GUANO AND PLASTER---AGAIN.

To the Editor of the American Farmer:

It is with no wish to engage in a discussion that I am prompted to offer a few remarks, by way of rejoinder, to the comments on the brief article published under my signature in the last number of the Farmer. In expressing your "dissent to my recommendations, deductions and opinions," I should have been glad if you had fortified it by some of those "well-attested facts" which you speak of as being so abundant.

But you have neither adduced any facts, nor have you met my argument by any opposing argument. On the contrary, your language, for the most part, is that of one speaking with authority. You say, "the effect produced by the union of sulphuric acid and ammonia is simply that of depriving the latter of its volatile nature; of preventing its escape in a gaseous form. Its office is conservative. It does not in the least operate to lessen the solubility of the ammonia, nor does it decrease its intrinsic value, or interrupt its effective action as a fertilizer." "The change of ammonia from a carbonate into a sulphate is the happiest form in which that description of food can be presented to the plants."

Without speaking of the novel chemical doctrines advanced in some of these extracts, we may regard them as quite a fair specimen of the manner in which a subject may be treated *ex cathedra*. You assume, as true, the very point in dispute, as if neither I nor your readers had any thing to do but to acquiesce. Now I have not the least objection to your *proving* the truth of your position—on

the contrary, I should be rejoiced to see it established; for if guano can be made more valuable than it already is, and its action at the same time perpetuated by the admixture of such a cheap agent as plaster, it would be an admirable discovery; —but I have rather a strenuous objection to your deciding the matter by unsupported assertions.— Such a procedure is not warranted by any rule of liberal discussion that I have learned.

But I feel at some loss to understand what is meant by plaster having a "conservative" influence on guano. I can very well understand that salt is preservative of meats, or that sugar and vinegar are preservative of fruits; but in the case of plaster and guano a chemical combination takes place, and a substance, not before existing, is the result. Sulphate of ammonia and carbonate of ammonia are just as unlike as sulphate of lime and carbonate of lime; and nobody, that I am aware of, supposes that either of these will supply the place of the other as a fertilizer.

You say that plaster and guano should be mixed together in certain proportions. "That *plaster* when mixed in *proper quantities* (the language is emphasized as I quote it,) with active animal putrescent manure, exerts a highly beneficial and conservative influence, we have no manner of doubt." "In the proportion of 25 lbs. of plaster to 100 lbs. of guano, the former can exert none other than a good effect." I refer to these extracts for the purpose of enquiring on what principle is this proportion determined? Would less be not enough, or would more be injurious? What is the precise condition to be fulfilled?

It would not be unwise if we were sometimes to remember that the greatest luminary of the age in chemical science—I mean Liebig—signally failed in compounding an artificial fertilizer, which it was deemed would supersede the use of guano. His failure should teach us a lesson of becoming modesty, and make us extremely cautious how we, with our farthing rush-lights—I use the term impersonally, and therefore without the slightest disrespect—venture upon curing the defects of guano, and correcting the errors of nature's laboratory. To combine plaster and guano is undoubtedly to manufacture an artificial manure, and how can we expect to succeed where Liebig failed?

There are doubtless facts enough in existence to determine the question at issue, if a correct report of them could be obtained. I should be glad if the Editor would join me in requesting such of the readers of the Farmer as are in possession of them, to submit them for publication. I should also be gratified if the Editor would publish a portion, at least, of that "series of the strongest and best-attested facts" which go to prove that the "sulphate is the happiest form in which that description of food (ammonia) can be presented to plants." I hope he will not take it amiss if I say that it is not his theories or authorities we want, but his *facts*. In the meanwhile I will set the example by citing a few, in order to show the deleterious effects of plaster on both guano and manure.

And first, I will quote from the letter of Thomas E. Blount in the Am. Farmer for last month (p. 309)—which was written without any reference to the matter in controversy: in fact it was the cause of it. "Last spring I purchased 515 lbs. of guano, to apply to the cotton crop. The land was exceedingly poor, growing only half a bushel of corn to the acre in 1847. The guano, mixed with 5 bushels of plaster and earth, was applied broad-cast to 3 acres of land, and ploughed in 7 inches deep as fast as spread:—harrowed, ridged and planted the land. * * Nov. 21, picked from the guanoed lot 400 lbs. of seed cotton," which brought him about $12 —or $4 per acre, at the then high prices.

The Farmers' Club of Sandy Spring, Maryland, had this subject under consideration as early as 1847. The annexed extract from their records has been kindly furnished me:

"At a meeting of the Agricultural Club of Sandy Spring, held 4th mo. 3d, 1847.

The following questions were propounded:

* * * * * *

Question: Should guano and plaster be used together?

Answer: A majority against it.

Extracted from the proceedings of the Club, by R. T. Bentley, Secretary."

Since then the subject has been twice discussed in the Club,—the last time only a few months ago, —when the members were almost unanimous in repudiating the mixture. Their decision is not a matter of opinion but the result of experience. Ever since the first introduction of guano into the country, it has been extensively used by the Sandy Spring farmers; and perhaps there is no district of our country, of the same extent, in which so much has been used. The members of the Club are as well educated, as intelligent, practical and successful farmers as constitute any similar association in Maryland or elsewhere. Amongst other experiments reported to the Club, there are two respecting the combination of plaster and manure, which I will cite specifically. "R. R. M—— stated that one season he used plaster liberally with his barnyard manure, and that he has never been able to see any good effect from that manure from that day to this." "W. J. T—— tried plaster with guano about 4 years since—making free use of the plaster —and the consequence was an almost total loss of the guano; while that applied without plaster had a good effect. He also applied plaster liberally with stable manure to potatoes, and made 25 bushels per acre—the smallest crop he ever made—and attributed the failure to the combination."

An intelligent gentleman of my acquaintance made some careful experiments in 1849 with plaster and guano on land seeded to oats and clover. Not having had an opportunity of witnessing the results, I requested him to furnish me with a statement of facts, whatever might be their bearing. His reply is as follows:

"It affords me pleasure to comply with your request by submitting a statement of the results of experiments made by me two years ago with plaster and guano in combination. I measured, or rather stepped off, a piece of ground of about 5½ acres, being part of a field intended for oats, all of which was extremely poor. The ground, thus measured off, I divided into three equal parts, on which I put 522½ lbs. of guano, an equal quantity on each lot, as follows:

On lot No. 1.—Plaster and Guano, equal measures.

On lot No. 2.—One measure of Plaster and two of Guano.

On lot No. 3.—Guano alone.

The whole was sowed broad-cast, and fallowed in with a large two-horse plough. The oats and clover were then seeded and harrowed in. The re-

sults I noticed particularly. The oats on the whole piece was much better than it was where there was no guano; but that on No. 3, on which guano alone was put, was much better than on either No. 1 or No. 2. The clover, the first season, on No. 3, was better than that on No. 1 or No. 2; but when I last examined it, I did not think there was so much difference. It may be proper to state that on No. 3, the clover was last year high enough to cut. I consider all the land much improved. It may not be amiss also to state that the oats on the adjoining land was hardly worth cutting, while on all the 5⅓ acres it was very good—and this by the application of less than 100 lbs. of guano to the acre."

I should like to give the writer's name, but I have not obtained his permission. It is, however, at the service of the editor.

While all the facts I have given go to show the injurious effects of plaster on guano, yet in the case last quoted the action of the guano was not destroyed. These variant results may probably be accounted for by the more or less perfect combination which took place between the two. When they are mixed together and applied without delay, the combination cannot be supposed to be complete. This was the case, I have every reason to believe, with the last mentioned experiments, from a conversation I had with the reporter on the day the application was made. In other cases—as in those of T. E. Blount and W. J. T.—the mixture may have lain for several days before it was spread on the land; and in regard to the manure, the combination must necessarily have been perfect.

There is one mode in which plaster may probably be used to advantage at the same time with guano. It is to apply them separately—the guano to be ploughed in, and the plaster to remain on the surface of the land. If Liebig's theory of the action of plaster is correct, this mode of application ought to answer well. He ascribes its action to its power of uniting with, or decomposing, the ammonia of the atmosphere. If such is its operation, then the plaster on the surface would not only attract the ammonia from the air, but arrest the volatile particles escaping from the guano through the earth; and thus the crop might have the benefit of the separate and specific action of each agent. But Liebig's theory is far from being conclusive. If it was true, we ought to expect that plaster would act alike on all soils needing ammonia—whereas we know that it is often entirely inert. We should also expect it to influence the growth of a greater variety of plants than we find it to do. Moreover, we might conclude that if a comparatively small quantity is so powerful in its effects, as we sometimes observe, an increased quantity would be still more so—an inference not supported by experience. It is the opprobrium of science that the action of plaster on plants should not yet have been explained in a satisfactory manner. The achievements of scientific men, in many departments of nature, have been wonderful—they have been almost angelic—but here is an operation which is being continually performed before our eyes, that still remains involved in impenetrable mystery.

T. S. P.

Petersburg, Va., April 8, 1851.

SUR-REJOINDER TO T. S. P.'s REJOINDER.

In the *comments* we made on the article published in our *April* number, we were prompted by no desire to provoke a discussion with our respected correspondent, "*T. S. P.;*" but feeling well assured, from what we deemed a thorough examination of the subject upon which he treated, that he was in error, we felt it to be our duty, not to permit his article to go forth to the public, without an unequivocal expression of our own views in the premises. If our dissent was expressed in strong terms, it was so expressed, because we were surprised that a gentleman who had written so many excellent papers on agricultural matters, could advance a doctrine so fraught with mischief, and which was, as we believed, at variance with all the lights of science of the present age. In anything we said, we were influenced by the kindest feelings towards the author, as we had often admired the productions of his pen, and were reluctant to differ with him upon that occasion; but believing that we had a duty to perform to the agricultural community, which was paramount to all considerations of mere personal delicacy, we discharged it with candor and frankness. With this explanation of motives, we shall proceed to examine the *rejoinder* of our correspondent, and offer such remarks upon it as may seem to be required at our hands.

"T. S. P." alleges that we neither adduced facts, nor met his argument by any opposing argument. With regard to the first part of this allegation he is not correct, as we very clearly stated the fact, that it was the practice of the late Col. *John Taylor, of Caroline, Virginia,* to mix plaster with his barn yard manure, and that he had found it as useful in that, as in any other way. In making that statement, as such admixture involved the *same principle,* as does the mixing of *plaster* with *Guano,* or any other nitrogenous manures, we flattered ourself that we had at least furnished one fact, and referred to others in a general way, because we were aware that the fact of *sulphate of ammonia* being an efficient manure, was as well established as any other substance known to the practice of agriculturists; and we thought, that, however much our correspondent might be disposed to question the propriety of our opinion, he would at least respect that of so distinguished, so enlightened, and so successful a farmer, as was the late Col. *John Taylor, of Caroline.* But if a *fact* furnished on his authority, is to be taken for nothing by our friend, "T. S. P.," because it contravenes his own opinion, it would appear difficult to present any that would prove satisfactory to a judgment so fastidious. For ourself, we are content to place implicit confidence in the approved results emanating from the practice of such a man; for the highly improved state of the farm of Col. Taylor, at the time of his death, showed that his *practice* was not only based upon correct principles, but that its fruits were proofs too strong to be resisted by a legion of opinions and theories. But as the *fact* which we furnished, in the *practice* of Col. Taylor, has either been repudiated, or overlooked, by "T. S. P.," we will, in the proper place, give him others, which we hope may prove satisfactory. Not contenting ourself with the facts we may educe, we shall give such an array of authority, to prove the soundness of our views, that we are almost tempted to believe it will shake even the confidence of "T. S. P." in his own theory.

With regard to our not having met his "argument by any opposing argument," we confess we have been sadly unfortunate if we did not; for we thought we had presented such an one, as would have been entirely satisfactory to every intelligent mind, not

predisposed against it,—if, however, our friend "T. S. P." could not, or would not, perceive its force, the fault is certainly not ours, as it is no part of our duty to graduate men's minds, so as to comprehend what we may write; but to write so that all may understand, who may not be so prejudiced as to reject its legitimate meaning and bearing.

By the very extract given by "T. S. P.," from our "*comments*," it will be seen, that we *did* furnish an "opposing argument;" by which we showed, that the transformation of the *carbonate* of ammonia into a *sulphate*, could not act adversely to its efficient operation,—that the only effect produced, was, that of preventing waste by volatilization—an effect which looked to an economic use—a prolonged action—of the ammonia—an effect calculated to keep the virtues of that salt *in* the soil, subject to the demands and wants of the plants, instead of permitting it to be lavishly expended in gaseous exhalations upon the air, where circumstances might occur to transfer their virtues upon a neighboring farm, instead of the one to which they had been applied,—as the wind might waft them from the one, and the rain bring them down on the other; thus fertilizing the soil of one proprietor, at the expense of another. It was to guard against such a disastrous result, that we recommended plaster as an agent to *fix the ammonia in the soil*, being desirous that those who have the spirit to improve their lands, should reap the rewards due to their enterprise, and realize profit on their expenditures.

Our correspondent "T. S. P." says: "Without speaking of the novel doctrines advanced in some of these extracts, we may regard them as quite a fair specimen of the manner in which a subject may be treated *ex cathedra*."

We advanced no "*novel doctrines;*"—all we attempted, was, to show, that, by the admixture of *plaster* with *guano*, sulphate of ammonia would be formed through the action of the plaster upon the carbonate of ammonia contained in the guano, and that such change would deprive the latter of its volatile nature. In this there is certainly nothing new; for it is one of those results which naturally flow from the double decomposition of the two substances; nor is the application of *sulphate of ammonia* a *novelty*, as it has been used in Europe with the happiest effects for many years. To strengthen our own opinion, we quoted that of professor *Jackson*, the enlightened Geological Surveyor of Massachusetts and New Hampshire—a gentleman who stands as high as any other in our country, for scientific attainments. We showed upon his authority, that "*Sulphate of ammonia*, is *the most powerful of the soluble sulphates*, for it conveys nitrogen and hydrogen to the plant as well as sulphuric acid." We thus entrenched ourself, to show the efficacy of this form of ammoniacal salt, as our correspondent appeared to labor under the belief, that, by depriving the ammonia of its volatile condition, its virtues were locked up from the plants. That we may do him no injustice, we will quote his language. He said:—

"The mixture of plaster with guano, and plaster with manure—for one is as objectionable as the other—has been a standing recommendation for the last six or eight years. The professed object is to arrest the escape of certain ingredients which would otherwise pass off into the air; in other words to "fix" the ammonia. That the ammonia is "fixed" most effectually, there can be no doubt; for the roots of the plants are never able to disengage it, at least in its *original* form."

From the obvious import of the whole tenor of the above paragraph, we saw very plainly that he was at fault, as to his conception of the nature of *sulphate of ammonia*—that he looked upon it as an insoluble substance, and knowing it to be among the most soluble of salts, we ventured to tell him so; considering it altogether unimportant, whether the roots of the plants were able to disengage it in its "*original form*" or not; for we felt very certain, that, so long as the ammonia remained in the soil either as a carbonate, or sulphate, the plants would partake of it, and prosper accordingly.

For the life of us, we cannot divine by what process of reasoning our esteemed correspondent could arrive at the un-chemical conclusion, that the transformation of the *carbonate* of ammonia into a *sulphate*, would place it beyond the power of the roots of the plants. Upon the authority of *Kane*, *Turner*, *Thomson*, *Chaptal*, *Ure*, and *Henry*, we state, that, according to their *actual tests*, two parts of water will dissolve one part of sulphate of ammonia. These gentlemen all enjoy the very highest reputation as chemists, and as men, and it is not to be presumed, that they are all wrong—have all been laboring under an illusion,—and that it remained for "T. S. P." to make the *discovery*, that it was so insoluble that "the plants" can "never be able to disengage it." Marvelous discovery this! And the more marvelous must it be considered, when it has been proved that growing plants can extract potash from the rocks—nay, that the fact is well established,—"that plants growing in a glass vessel, will decompose the glass, to obtain the potash which enters into its composition."

"T. S. P." is in error, also, as to the *time* when the use of plaster with nitrogenous manures was first recommended; for, instead of its dating back only "six or eight years"—not to travel out of our own country—we find it strongly recommended in the Volume containing the admirable essays of "*Arator*," written by that eminently observant farmer, Col. *John Taylor*, of *Caroline County*, *Virginia*, which was published in 1818—and we find the same recommendation, contained in a letter from the same gentleman, dated June 13, 1809, and published in the "*Memoirs of the Philadelphia Society for promoting Agriculture*," vol. 2, for 1811. In the "comments" which we published upon the former communication of our correspondent, "T. S. P.," we quoted the opinion of Col. Taylor, from *memory*, for though we have his excellent work, we had not read it for years; but we find on reference to it again, that his *opinion of the utility of mixing plaster with barn-yard manure*, *is stronger* than we stated it to be—and we desire it to be understood, that the opinion of Col. T. was based upon his *experience* and *practice*. Why "T. S. P." should pass by Col. T.'s *experience* and *practice* then, and hold up such use of plaster as a *novelty*, is not for us to say; but this much we will say,—that, in our opinion, any *practice*, which had received the sanction of a mind so discriminating, and so competent, as was that of Col. *Taylor*, is entitled to the confidence of every fair minded agriculturist, as he farmed with the two-fold purpose of improving his land, and of making money by his occupation—in both of which he was signally successful. But is "T. S. P." sure, that plants take up ammonia only in the carbonate form?

Professor *Gray* says, that "the *forms* in which ammonia enters the organs of plants are various. It may enter uncombined, simply dissolved in water,

and be assimilated in a manner similar to oxygen, carbon and hydrogen. But it probably enters as a salt, that is, *in combination with acids*. Dr. *C. T. Jackson* supposes, that the carbonate of ammonia acts upon the organic matters of the soil, and renders the organic acids neutral and soluble; decomposes and renders inert, noxious metalic salts and other compounds. Dr. *Dana* supposes, that ammonia combines with the geine, to form a soluble compound, and also acts by its presence to convert vegetable matters into geine. In either case, it would be introduced into the organs of plants, and its *nitrogen* assimilated." From these views, it is unimportant, whether it be presented to the plants in its original form, or in a compound one; whenever rain occurs, to dissolve and hold it in solution, the spongioles and rootlets will absorb and assimilate it, whether in the one form or the other. Its *presence in the soil*, is the great consideration after all; hence, we should place it there in a state that may be continuously available to the plants, and not in one that may render it uncertain, whether it may be absent, or present, when called for by the necessities of the plants.

The forms in which ammonia enters the organs of plants, are probably various. It may enter uncombined, simply dissolved in water, and be assimilated in a manner similar to oxygen, carbon and hydrogen. But it probably enters as a salt, that is, in combination with acids. Dr. C. F. Jackson supposes that the carbonate of ammonia acts upon the organic matters of the soil, and renders the organic acids neutral and soluble; decomposes and renders inert, noxious metallic salts and other compounds. Dr. Dana supposes that ammonia combines with the geine to form a soluble compound, and also acts by its presence to convert vegetable matters into geine. In either case, it would be introduced into the organs of plants, and its nitrogen assimilated."—*Gray's Agricultural Chemistry.*

Professor Gray says: "We may add, no conclusion is better established than this, that ammonia does not furnish plants with the *whole* of their nitrogen."

It is evident from the whole tenor of the reasoning of the above extracts, that our friend is at fault, and that it is immaterial, whether the plants have ammonia presented to them in its "original form" or not; the great thing is, to present it to them in some form. Once place it within their reach, and they will perform all the work of carving, masticating, and digesting, with as much grace as Chesterfield, with the appetite of a hungry wolf, and the digestive powers of an ostrich.

Daubeny, says professor Gray, has shown, that nitrate of soda, placed upon lands sown with wheat, increased the gluten of the wheat 4.25 per cent., and the albumen 0.75 per cent. The gluten and albumen contain great quantities of nitrogen, and will be abundant in the seed, in proportion to the proper supply of matters from which they may obtain it. Whence do they obtain this additional supply of nitrogen, but from the nitric acid. *Nitrate of potash* produces a similar effect. It is well known what a powerful effect salts of *nitric acid*, especially salt-petre or nitre, have upon the growth of vegetables. This influence must be due to the nitrogen which is furnished to the gluten, vegetable albumen and other products of the vital power.

Upon the whole then, it is highly probable, that plants derive their nitrogen from ammonia, crenic, apocrenic and nitric acids, and that vegetation will be abundant in proportion as these substances are supplied to the roots of plants. They are not, however, introduced in their pure state, but are combined with inorganic bases, in the form of salts, and are decomposed, and their elements assimilated by chemical and vital forces."

Our good friend "T. S. P." will have perceived by this, that his *suggestive* idea, that ammonia enters into plants in its "original form," is truly *original* with himself; but is unsustained by every reliable authority; and, therefore, that it will be wise in him to *remodel* his *theory*, as it is certainly very unpleasant for a teacher to occupy an isolated position, when all the great lights of science are against him. This thing of standing alone in one's glory, is not agreeable, even when one may be right, but it is positively annoying when he is palpably wrong.

With regard to his imputation, that we spoke "*ex cathedra*,"—we disclaim all pretensions of the kind. Our ambition is of an humbler kind. Devoted by every feeling of our heart to the cause of agriculture, and to those who live by that noble calling—it has formed with us, from our earliest years, until the present, when the frosts of nearly sixty winters have passed by, a passion that will endure till we see "the last of earth;" and, therefore, it is, that we have striven, to the best of our poor abilities, to advance its interests, with integrity and zeal, without ever attempting to render ourself conspicuous; content that our labors should speak for themselves, being averse, alike from disposition, and from principle, from courting the popular favor, either by assumptive, or by servile means. From a love of agriculture, as an ennobling art, as well as from a sense of duty, we have read most of the authorities upon *Agricultural chemistry*, from that by *Davy*, the illustrious father of the science, up to the latest works, and though we may have gained some inklings of information, we are too sensible of our own insufficient knowledge, and too modest withal, to attempt to speak from the chair, or as one clothed with high authority. There are pretenders enough, without our swelling the list, if our taste did not revolt at the idea of such presumption.

In the second paragraph, it is alleged that our "*language, for the most part, is that of one speaking with authority*"! and we pray leave to assure our respected friend, that if we had not had the very best authority for what we said, we should not have undertaken to correct the erroneous views entertained and promulgated by him. But as all the learning of the books plainly demonstrated the incorrectness of his position, we believed it to be a duty we owed to our patrons to tell them so, as it has ever been our policy to recommend no application of manure, that did not look to lasting effects,—and knowing that, by converting the carbonate into a sulphate of ammonia, we should promote the object we had in view, as such conversion would arrest the escape of the gas, and thus husband what is understood to be the most effective principle of guano, as food for the plants, we distinctly stated our purpose, as we had often done before. Though we disclaim all pretensions to any desire, that what we may say, shall be received in the odious light which our correspondent would ascribe to us, we trust we shall ever have too much self respect, to oppose our *dictum* to the teachings of men of science, whose lives have been devoted

to study, and whose works are the eloquent proofs that they have not studied in vain.

"T. S. P." is so kind as not to have the least objection to our *proving* the truth of our position. This is certainly most generous and condescending in him,—and we shall, before we have done, avail ourself of his permission; but considering that our position has already been supported by facts, argument, and practice, it is rather far-fetched for him now, in the presence of our mutual readers, to affirm that our position rested upon our unsupported assertions. The *practice* of so distinguished an agriculturist as Col. Taylor, and the corroborative opinion of so competent a chemist as professor *Jackson*, is certainly entitled to some weight, though opposed by the *opinion* of our correspondent, however gifted, and however deeply imbued with the lights of science he may be, especially as almost every farmer and planter in the country, who may have used plaster in composts for his crops, have had opportunities of testing the fallacy of that opinion, while the books are full of experiments, demonstrating that sulphate of ammonia is a most powerful and efficient manure.

Our correspondent feels "at some loss to understand what is meant by plaster having a "*conservative*" influence on guano." If we had not already explained, that its "conservative influence," consisted in arresting the volatalization of the carbonate of ammonia, and of preventing the consequent loss of its virtues, we might ascribe his embarrassment to some other motive than that of affectation. The word "conservative" is a legitimate one—was legitimately used—and if it had been unexplained, would have conveyed our meaning intelligibly to every mind disposed to understand; so that the carping upon the term, is entitled to any other appellation than that of just criticism. The questions which our correspondent asks, with respect to the quantity of plaster to be applied to a given quantity of guano, partakes of the same character as his criticism. In the apportionment of quantities, we have generally looked to *economy*,—and, in apportioning a peck of plaster to 100 lbs. of guano, we kept that principle in view; less would in all probability answer, and a slightly increased quantity do no harm. We have seen more, and less, recommended, than the quantity named by us, but as our desire has always been, to save expense to the agriculturist, and opposed to unnecessary expenditures, at all times, we named the quantity we did, believing then, as we do now, that it is quite sufficient to answer the purpose intended. "T. S. P." has a wonderful facility of asking questions, and in turn, if we did not think it would be trifling, we would ask him, to state his reasons for supposing that the quantities named is not correct? Whether "less would not be enough? or more injurious?" As to his question,—"What is the precise condition to be fulfilled?" we candidly confess, that its meaning is beyond our comprehension.

The allusion to professor *Liebig's* failure in his artificial manure, has no relevancy to the subject matter at issue between our correspondent and ourself. Without pretending to know the cause of that failure, we may remark, that the general belief, is, that it arose from his adherence, in compounding it, to the doctrine which he taught in his great work—and it is great, notwithstanding some inconsistencies—that the atmosphere was the great store-house, where plants derived their *organic* food, and that it was only necessary to see that the *inorganic portion* was in the soil. In a review by professor *Gray*—a gentleman who, in virtue of his position, has a right to speak, "*ex cathedra*," for he fills a chair with dignity, and great learning—he thus forcibly expresses himself upon Baron L.'s doctrine:

"But whatever theories we may form on this subject, upon the force and assimilation of the *carbon*, *hydrogen*, *oxygen* and *nitrogen* of plants, one thing is certain, that the farmer must supply vegetable and animal manures which contain these elements, or the carbonic acid, water, and ammonia of the atmosphere, will not be gathered into the form of vegetable productions."

Our correspondent, though not exactly a believer in the faith of Baron *Liebig*, in regard to the non-necessity of applying putrescent manures, would seem, by his *counsel*, to arrive at the same result, by an opposite process. Baron L's. doctrine *excludes* the application of such manures to the soil, and relies upon the air and the rain, to furnish them: while our correspondent *applies* them; but, in such a way, as to let the substance furnishing the *nitrogen* to the plants, take an ærial excursion, that it may be brought back to the earth in the dews and rains, but it furnishes no security that, in its descent, it will return to the same soil whence it ascended. The Baron's plan, when compared with that of our correspondent, is an economical one; for though founded on a fallacy, it occasions no *outlay*; so that if it fails, as it assuredly will, whenever tried, to confer a benefit, it costs nothing,—whereas, his involves a heavy expenditure, and offers but an equivocal assurance of resulting profits.

The disavowal as to any intention of applying the term "*farthing rushlight*" to us, was unnecessary. We are not so puffed up with self importance, as to take offence at the use of a word, the meaning of which, merely conveys a disparaging estimate of the calibre of our mind,—for the use of all the naughty words in the Lexicon, would not add to, nor abstract from, its volume the thousandth part of a line. Whatever its capacity may be, it was the gift of a higher power than that of man; for that gift we are thankful—thankful in the true spirit of a christian heart—and would not permit our equanimity to be disturbed, though one were to call us a *nincompoop*, the lowest phrase, perhaps, that could be used, to convey the idea of our being a fool.

Men who feel themselves cornered in an argument, sometimes use such means, to divert the attention of the by-standers from their own pitiable condition; but the man of manly, ingenuous heart, never resorts to such clap-traps—he prefers defeat, and an open acknowledgment of his error, in preference to having recourse to a process always equivocal in propriety—always condemned as partaking of bad taste. These remarks are altogether "impersonal, and, therefore, used without the slightest" intention "of disrespect" to our highly valued correspondent.

We join our own wish, with that of our correspondent, that gentlemen who have used *guano*, in conjunction with *plaster*, or by *itself*, would report to us the results of their experience in its use. Our object, like his, is to elict the truth, and place the agricultural public in possession of such lights, as cannot fail to direct them in the most economical way of using this great fertilizer.

We trust we shall be able to give "T. S. P."

"*facts*" to his entire satisfaction; but we must crave his indulgence, while we furnish him "*theories*" also, as we promise him, that they shall be of a character to deserve, though they may not receive, the sanction of his astute mind. By the by, it appears to be opportune to the occasion, to ask him, what has become of those important facts he spoke about so triumphantly, in the second paragraph of his first communication? Their embodiment in his "*Rejoinder*," might have been of infinite service in enlightening the public mind. With this question and remark, we will briefly review the facts he has adduced.

The first in order, is that of the Hon. *Thomas E. Blount*, which is extracted from our March number—page 309. The land was of the very poorest kind, yielding in 1847, *nearly half a bushel of corn to the acre*. To 3 acres of this land he applied 515 lbs. of Guano, being at the rate of 171⅔ lbs. to the acre: the product of the three acres was 400 lbs. of seed cotton—a small product, in all conscience! but this failure might have been caused by other circumstances than any want of efficacy in the guano and plaster; for the elements of each of these are found in the cotton plant. There may have been some *inorganic* substance wanting in the soil, that was not sufficiently abounding in the manure applied;—the volatile elements of the guano may have been impaired by exposure, or the season may have been adverse to a fair result, as *guano and plaster both require water to prepare them to become the food of plants*. Land so poor as only to bring a half a bushel of corn per acre, must, of course, have been long in culture; and if so, may have needed liming and marling, and a crop or two of peas turned under, as a preparation for guano. Such is the course we would pursue; for though guano is an excellent manure—one of the best of the highly concentrated animal manures—among the most effective fertilizers known,—it, like other substances, is dependent upon circumstances for its effective action. Where there may be mould and all the necessary inorganic substances, in the soil, we should always look for large yields from an application of it, for among animal manures, it certainly stands pre-eminent. To have given a fair test, however, to the experiment, it would have been necessary to have applied guano alone, and guano and plaster mixed upon land of the same character; then, the result would have afforded a criterion to judge by. We are pleased, however, to perceive by Mr. B.'s communication, that, with the genuine spirit of an enlightened farmer, he intends to give guano another trial, and we sincerely hope that his next experiment may be more fruitful of reward, as his desire to improve richly deserves success.

We feel gratified that we are fully sustained in the view we have taken above, by the opinion of Dr. *David Stewart*, of Baltimore, who, as an accurate analytical chemist, enjoys the highest reputation—and whose successful treatment of a field of the Hon. *Reverdy Johnson*, bringing up its fertility in a single dressing, from a product of corn the previous year of less than 1 peck to the acre, to one of 29 bushels of *wheat*, the succeeding one, proves that he enjoys it deservedly. In the article in which the details of the improvement of Mr. J.'s field are stated—which may be found in our October number, page 149—he says:

"It is demonstrated, then, that bones, lime, plaster and salt, are only relatively good; that even the best *guano must fail when applied to soils that require some other substance.*"

The *second* case cited by our correspondent, is that of the *opinion* of the members of the Agricultural Club of Sandy Spring. As a body of intelligent enterprising gentlemen, they are not to be excelled in any part of our country, and we would respect any opinion they might deliberately form upon an agricultural question, where experiments had been made, as soon as we would the opinion of any other body of gentlemen in the country.

The statement of Mr. "R. R. M." is not conclusive, either for or against the use of plaster with nitrogenous manures, as the cause of the non-action of the plaster and manure, may, with equal propriety, be ascribed to other causes, as to the plaster—and the same remark may apply to the cases cited by Mr. W. J. T. So far as his experiment with potatoes is concerned, we feel assured, that *plaster* had no agency whatsoever in the smallness of the product. We have used plaster, mixed with a free hand, with barn-yard and stable manure, and had an extraordinarily large crop,—and we have known others to do so, with similar results,—but we, and they, used ashes, also with a free hand, as always ought to be the case, the potato being emphatically a pot-ash plant.

The last fact adduced, is certainly in favor of our view of the case,—the gentleman who made the three experiments, concludes in these words,—"It may not be amiss also to state, that *the oats on the adjoining land was hardly worth cutting, while on all the 5⅓ acres it was very good—and this by the application of less than 100 lbs. of guano to the acre.*" The italicising is by ourself, made, in order that this strong fact may be more conspicuously brought to the reader's consideration. We should be pleased to learn, whether the same quantity of guano was applied to each lot,—that *fact* being a very important one.

Being content to leave Baron *Liebig's* theory, as to the action of plaster, to be settled by that gentleman and "T. S. P.," as it really does not concern the subject matter at issue between the latter, and ourself, we shall now proceed to give facts, and present the opinions and theories, to which we have before alluded.

1*st Fact.* Col. *John Taylor*, of *Caroline County, Va.*, in "*Arator*," 4th edition, page 80, in speaking of his plan of manuring, says:—

"My general rule is to deposit the loads, consisting of as much as four common oxen can draw, in squares at ten yards distant from each other, so that the extreme distance in spreading it, will be five from the centre of each heap. But this general rule admits of important exceptions. If the land fluctuates in fertility, the loads may be deposited at twelve yards distance, which is a good dressing; *and if it is accompanied with gypsum*, THE QUANTITY TO AN ACRE MAY BE DIMINISHED ONE-FIFTH, IN CONSIDERATION OF ITS AID."

"For some years I have used *gypsum with the coarse manure of the farm yards, and* I THINK IT THE MOST BENEFICIAL WAY OF USING IT. The manure carried out each day is ploughed in, before which one bushel of *gypsum* to the acre, ground fine, is sown on it, after it is spread."

In a letter published in the "*Memoirs of the Philadelphia Agricultural Society for the promotion of Agriculture*," dated June 13th, 1809, to which we have before alluded, in detailing his plan of manuring, he says:—

"The manure is carried out, spread on land fal-

lowed in winter, that it may separate easily and mix well with the coarse manure; a bushel of *plaster* to the acre is sown on it after it is spread, and it is ploughed in, all on the same day. I have frequently for experiment, left my manure longer periods to rot undisturbed—made up into large dunghills—mixed and unmixed with earth—covered and uncovered, and in all have suffered a loss of labor and manure, in proportion to the deviation from my present practice." * * PLASTER "INCREASES THE EFFECT OF COARSE MANURE." * * "Excessive moisture, or excessive drought, destroys its effect; that effect is more likely to be destroyed when sprinkled on the surface, than when mixed with the earth."

The *experience* of so excellent a farmer as was Col. Taylor, is worth more than many theories, not based on actual experiments. And as the results of his *practice*, through a long series of years in mixing *gypsum* with farm-yard manure, and ploughing it in, taught him, that it was the "*most beneficial way of using it*," we would be willing to rest the fate of our case upon his evidence alone; for it completely establishes our position, not only as regards the mixing plaster with barn-yard and stable manures, but with *guano*, and all other highly concentrated animal manures, also, as the *same principle is involved throughout*—one common result pervading all such operations—the formation of the Sulphate of ammonia, and the consequent preservation of it for the use of the plants. No one who knew the discriminating character of the mind of Col. T., would for a moment believe, that he would, through a long series of years, have followed this practice, unless he had derived great benefit from it. We shall, however, carry out the plan indicated in the preceding part of this paper.

We shall now introduce the testimony of Mr. *F. Schetter*, Jr., a gentleman of respectability and character, and whose word and judgment in entirely to be relied upon. As we had seen all his crops growing, and was an eye-witness to the fine effect of the mixture of *guano* and *plaster*, we applied to him for a statement of the facts of the case. His answer will be found below:

2d Fact. "Dear Sir: In answer to your inquiries, I have to state, that I superintended my father's farm in Baltimore county, during the last three years,—and that, owing to the scarcity of barn-yard and other domestic manures, we had to rely mainly upon Guano for the manuring of our crops. I applied it, *mixed freely with Plaster*, say, in the proportion of about half a bushel of *Plaster* to 100 lbs. of *Guano*, on WHEAT, CORN, OATS, RYE, POTATOES, MILLET and BUCKWHEAT,—the *result* of each of which applications was highly satisfactory; the crops being luxuriant and productive; and when compared with portions of the same ground, where plaster and guano was not applied, exceeding the latter more than 100 per cent.

On parts of the ground allotted to small grain, *clover* was seeded, and afforded a fine crop last year, and bids fair to do the same this. Much of the land had been previously limed.

Yrs. F. SCHETTER, JR."

The above results are conclusive as to the fact, *that plaster does not impair the efficiency of guano*, and would irresistibly force the conviction upon the mind, that where, after admixture, the latter does not produce the anticipated effect, that the *failure* must have been produced by something else.

3d Fact. We shall now give an extract from the able address of the Hon. JAMES A. PEARCE, delivered before the *Maryland State Agricultural Society*, on the 12th of October, 1849, which may be found in the *American Farmer*, of that year, p. 181. Mr. *Pearce*, by all who know him, is acknowledged to be as distinguished as a practical and scientific farmer, as he is in the Senate of the United States, for his eloquence and statesmanship. After dwelling upon the nature and merits of other manures, he says:—

"But the portable manure most striking in its immediate effects, and which seems to me likely to be most available on the poorer soils, is guano, particularly the Peruvian. This is rich in ammonia and the phosphates, and is particularly valuable as a fall dressing for wheat. I have used it for the last five years, with signal success, sowing it on the land prepared for wheat at the rate of 200 lbs. to the acre, and ploughing it in with the wheat. It has never failed to remunerate me amply; and I am quite sure that it has added from 5 to 10 bushels of produce to the acre. I think it a capital manure for the succeeding crops of clover, and more permanent in its effects than is generally thought. In April, 1845, I applied 350 lbs. to an acre of growing wheat, the land being entirely unimproved, and very poor. Of course it was applied as a top-dressing, *mixed however, with plaster*. The wheat was doubled in quantity, at least; fine clover succeeded it; and in two crops, one of corn, and the other of small grain, last year and the present, the effects are still apparent."

4th Fact. With this *fact* we might close this part of our proof. It is furnished by one of the most distinguished farmers of North Carolina, the Hon. *H. K. Burgwyn*, a gentleman, who, wherever known, is as beloved, as he is respected, for the goodness of his heart, and the superiority of his understanding. It is an extract from a communication of his, published in the Vol. Am. Farmer for 1850, page 52. He says:—

"Having about 150 acres of my wheat this year sown upon last year's corn land, and the land being rather light, and not too rich, I feared lest I should fail with my grass sown on *this* wheat, because of the two successive cereal crops, I therefore bought guano, *mixed it with its bulk of* PLASTER, then added fine charcoal, the same, and to this mixture double the whole bulk of deposite of the Roanoke river, a rich alluvial earth, and sowed the whole broadcast in February and March, and harrowed it in, on top of the wheat. I sowed at the rate of 200 lbs. of guano to the acre; *the value of this, no doubt, was doubled by the mixture* with the absorbents of the ammonia, as I was extremely careful, in the manipulation, to cover the guano with several inches of the plaster, &c., to prevent the escape of the ammonia, even when left for a few hours, as it is exceedingly volatile and easily dissipated by the March winds. On this wheat land, I had sown in October previous, clover, timothy, Kentucky blue grass, and Italian Ray grass. My harvest has been over, it is now three weeks, and I have never had a finer stand of all these, even on our rich bottoms. The Ray-grass matured its seed, rather sooner than the wheat, was two-thirds as tall, and where very *thickly sown*, materially injured the product of the wheat. I have reaped an increased product from the wheat, amply sufficient to repay my outlay for the guano, plaster, &c., and have my grass as my profit on the investment; this, in turn, will shade and improve my land, fatten my stock, increase my

crops, and cheer my eye with "grassy slopes," instead of "galled hill sides." This is profit sufficient for the most greedy, if turned to a proper account;—be it remembered too, this was a light and rather *poor soil*, but based on a good clay subsoil."

Fact 5. In a communication published in the August number of the American Farmer, p. 54, *Edward Reynolds*, Esquire, a highly intelligent merchant and successful farmer, says:—

"Since 1843, I have been trying to find out which is the best of all these "new things," and have now, after having been very considerably "humbugged," settled down upon Bones and Guano—although the last named in a very *dry year*, has also cheated me; but this is by no means its character, as I am constrained to admit, that after having tried it on all sorts of soil, and perhaps as long if not longer than any other person in the State, it is my opinion that, when *properly applied*, with an average fair season, it is a very *powerful* fertilizer. My mode of using it, is, when applied on *Tobacco*, to mix 1½ bushel of the Peruvian, (which is ordinarily 100 lbs.) with one bushel of rich earth, and 1 bushel *Plaster*, which admits about 1.5 part of a gill of the mixture, to each hill for every 5000 hills—and putting it in the centre of the check before being scraped—so that when the hill is made, it lies beneath the plant. On *Wheat*, I apply 3 bushels of Peru. Guano, equal to 200 lbs. mixed with 1 bushel *Plaster*, 1 bushel rich earth to the acre, sowing on the surface and plowing it in as soon, and as deep as possible, after it is sowed. The past spring I have put 300 lbs. to the acre on 30 acres *corn*—being half of a field, on a farm in Calvert, mixing with it the same quantity of rich earth and *plaster*, and sowing on the surface, plowing in at once very deep, using the *cultivator* only in working it afterwards.

"I do not intend to use it, at all, with corn hereafter, and not because I do not think it also a good fertilizer with this crop, (as my corn on my Calvert farm, upon which it has been used, now shows *very fair*,) but only because it has never failed to pay me *three-fold* better on wheat, than on anything else. In order to test its virtue, it is essentially necessary to plow it in deeply, and stir it as little as possible afterwards."

With this fact, we shall conclude this branch of the subject, and are willing to let our readers judge whether we have, or have not, triumphantly sustained, by *actual results*, the position we assumed, and the theory we laid down. As it is a delicate matter for any one to be a judge in a case to which he may be a party, we submit the decision to the impartial arbitrament of the agricultural public, who, we feel assured, will decide without favor, affection, or partiality.

We will now show, that we were well supported by various *authorities*, for all we have ever advised in connection with the use of guano.

Mr. *Edward Stabler*, in his great "*Essay on the renovation of worn-out lands*," for which he received a premium valued at $50—after descanting upon the value of various manures, and detailing several experiments he had made with guano, gave this as his opinion, as to the *best manner* of using it:

"*Guano* should *not* be used with caustic lime, or ashes; nor very soon succeeding their application. *It may, with decided advantage, be mixed with* PLASTER, *to fix and retain the ammonia;* and for nearly, if not all crops; it is best to sow it broadcast, and *plough* it in immediately."

Mr. S. was one of the first who used guano in our State, and therefore speaks from an *experience* of many years, and, without intending to flatter him—for we "would not flatter Neptune for his trident"—we may, in all sincerity, affirm, that his is high authority, because truthful, disinterested, and sincere.

Dr. *D. P. Gardner*, the enlightened author of the "Farmer's Dictionary," says:—

"*Guano* should be sowed with a mixture of fine soil, *gypsum*, or charcoal."

Professor *Norton*, the author of the "*Elements of Scientific Agriculture*," a work that cannot be read by a man of sense, but to be admired, says:—

"The best way of applying it, [Guano] and indeed all of these powerful fertilizers, is at the rate of from 1 to 2 cwt. per acre, together with half the usual quantity of barn-yard manure. The supply of organic matter in the soil is thus kept up, while large crops are at the same time obtained. * * I have recommended that experiments be tried in dissolving guano, or at least its phosphates, in *sulphuric acid*." Sulphuric acid, the reader will understand, is one of the elements of which plaster is composed.

Again, in treating of liquid manures, he remarks, thus:—

"The proper way to save this liquid is to have a tank or hole, into which all the drainings of the yard may be conducted. If left here long, this liquid begins to ferment, and to lose nitrogen in the form of ammonia, which it will be remembered is a compound of nitrogen and hydrogen. To remedy this, a little *sulphuric acid*, or a few pounds of *plaster* may be thrown in. The sulphuric acid will unite with the ammonia, and form *sulphate of ammonia*, which will remain unchanged, not being liable to evaporate." * * In speaking of the action of *plaster*, he observes:—"To this same property [the power of attraction] is to be ascribed its action when scattered over compost heaps, or mixed into the liquid of tanks. In both cases it absorbs ammonia, and prevents its escape. * * * A little *gypsum* sprinkled over the surface of the heap, will arrest this evaporation and loss almost immediately."

Baron *Liebig*, treating of the effect of applying plaster to nitrogenous substances, speaks thus:—

"The ammonia emitted from stables and necessaries is always in combination with carbonic acid. *Carbonate of ammonia* and sulphate of lime (*gypsum*) cannot be brought together at common temperatures, without mutual decomposition. The ammonia enters into combination with the sulphuric acid, and the carbonic acid with the lime, forming compounds which are not volatile, and, consequently, destitute of all smell. Now if we strew the floors of our stables, from time to time, with common gypsum, they will lose all their offensive smell, and none of the ammonia which forms can be lost, but will be retained in a condition serviceable as manure."

Again—he says:—

"If a field be strewed with *gypsum*, and then with putrified urine or the drainings of dunghills, all the carbonate of ammonia will be converted into the sulphate which will remain in the soil"

And we would ask,—Is it not better that it should "remain in the soil," to feed the plants, than to be permitted to make "an excursive voyage throughout the air?"

Professor *Nesbit*, of England, in a lecture upon

manures, while dwelling upon the best method of forming dung heaps, with the view of preventing the loss of its ammonia, says:—

"There are many ways of making dung heaps. Perhaps the *best way* is to make layers of animal excrements with straw on a mould bottom; to lay thereon a foot or so of manure and straw, a little GYPSUM over that, and sometimes a little mould; then another layer, and so on, covering the whole with six or eight inches of ditch stuff."

It will be here seen, that professor *Nesbit*, who, besides being a distinguished chemist, is a practical and scientific farmer, apprehends no danger from the dreaded *sulphate of ammonia!* It is no raw-head and bloody-bones to him. It is possible that his nerves have been preserved from a shock, because he believes it is better to *save* than to *waste*.

Dana, the author of the "Muck Manual"—one of the best agricultural books ever written—says:

"Among the mixed manures, poudrette, and guano, rank next to night-soil. Poudrette, is night-soil partly dried in pans and mixed up with variable quantities of ground peat and *plaster*. *Its value will depend on the circumstance, whether its ammonia is saved or lost in the manufacture.* If *Sulphate* or muriate of lime is added before drying, then the volatile carbonate of ammonia, will be changed into the sulphate of ammonia, and sal ammoniac. Thus not only the most valuable portion of night-soil will be retained, but the salts of lime will be much increased."

Professor *Gray*, in his admirable work, entitled "*Agricultural Chemistry*," says:

"*Poudrette* is night-soil mixed with ground peat and *plaster*, and dried so as to be rendered inodorous and portable. If the *sulphate of lime* and peat are added before it is dried, the ammonia will be converted into a sulphate, or absorbed by the peat and retained. The value of good poudrette depends upon the quantity of ammonia and geine."

Again, he says:—Ammoniacal salts *exert a very marked action on vegetation*, and may be employed in the quantities of 150 lbs. of the *sulphate*, or 100 lbs. of the carbonate, per acre. * * The kind of influence they exert gives force to this position; for the carbonate and *sulphate of ammonia increase the quantity of vegetable products*, which require the largest quantity of nitrogen; that is, the gluten and vegetable albumen."

Surely then, when we find the presence of ammonia in the soil so indispensable to the successful growth of vegetables, we should take all practicable pains, to place it there in a condition to remain until called upon by the growing plants to yield up its contributions, in the formation of their structures and fruits; for, according to Liebig:—"we may furnish a plant with carbonic acid, and all the materials which it may require; we may supply it with humus in the most abundant quantity, but it will not attain complete development unless nitrogen is also afforded to it; an herb will be formed, but no grain; even sugar and starch may be produced, but no gluten."

Professor *James F. W. Johnston*, in treating of the difference between vegetable and animal manures, in speaking of the latter, advances the following views, which demonstrate most conclusively, that it is safest to use some agent with all concentrated manures, to prevent loss by evaporation. These are his words:—

"In consequence of containing so much nitrogen, animal manures are further distinguished by the rapidity, when moist, they putrify or run to decay. During this decay the nitrogen they contain gradually assumes the form of ammonia, which is perceptible by the smell, and which, *when proper precautions are not taken, is apt, in great part to escape into the air.* Hence the loss by fermenting manure too completely,—*or without proper precautions to prevent the escape of volatile substances.* And as animal manure, when thus over-fermented, or permitted to lose its ammonia into the air, is found much less active upon vegetation than before, it is reasonably concluded, that to this ammonia, chiefly, their peculiar virtue is in a great measure to be ascribed."

Again: In an article dwelling upon the action of different salts of ammonia, professor Johnston remarks:—

"If this reasoning from analogy be correct, we would expect the *sulphate of ammonia* to rank among the most useful of manures—since one constituent (ammonia) will promote the general growth of the plant, while the other will expend its influence more in the filling of the ear."

In the "*American Quarterly Journal of Agriculture*," Vol. 1, p. 357, we find the following:

"Guano should be sowed with a mixture of fine soil, *gypsum* or charcoal."

Is it not wondrous strange, that no one, save our venerated friend, who may have investigated the subject, entertains any injurious effects as likely to result from mixing guano and plaster together? Is it not still more strange, that he should persist in his opinion, in opposition to the received doctrine of the most scientific men of the age? Does it come within the range of probability, that none but he have been able to trace effects from causes, and say, what is, and what is not, the food of plants? It was very happily said by professor *Jackson*, in a late agricultural address, that "we should be cautious not to deny every thing that does not chance to have fallen within our own personal experience."

Professor *Mapes* says: We have tried liquid manures of different kinds on grass lands, with good results. Thus the drainage of barn-yards diluted with ten times its bulk of water and applied to sluggish meadows while wet or during a shower, will sometimes double a crop—or 100 pounds of Peruvian guano dissolved in 100 gallons of water in which 20 pounds of *sulphuric acid* has been mixed, and the whole applied to an acre of grass land in early spring, will be found to augment the crop in a most profitable ratio."

Again,— in recommending the application of *sulphuric acid* to organic manures, he says:—"This will change the escaping carbonate of ammonia to the *sulphathe of ammonia*, which is not volatile, and will, therefore be rendered fixed or permanent, until the action of growing plants can decompose it." * "Early this spring, we top-dressed a grass lot which has been long used for pasture, and was considered as fairly worn-out, with the following compost per acre:—

Common salt,	3 bushels,
Peruvian Guano,	25 pounds,
Sulphate of ammonia,	10 pounds,
Plaster of Paris,	1 bushel,
Charcoal dust,	10 do

The compost was made one month before use. The sulphate of ammonia applied to the compost in solution. This compost cost three dollars, and *increased* the yield of hay more than one ton as

compared with last year, besides furnishing fine pasture during the after part of the season."

Professor *Mapes*, in his January number of the "*Working Farmer*," gives the details of the result which he made to restore a worn-out piece of land to fertility. The soil was so exhausted that *it refused to grow corn the previous year*—he analyzed it, discovered its deficiencies, and applied the remedy, with success. But let him tell his own tale:

He says:—

"We give the following from our Diary of last month:—

Measured the corn to-day raised on the Kanouse lot, which gave 340 bushels of ears: measurement of lot 3-100 acres. This soil, refused corn last year. Analyzed the soil last winter and found it to be deficient of chlorine, soda, potash, phosphate of lime, and ammonia. Made a compost and applied it in the spring, as follows, viz:

"Old salt and lime mixture, (chloride of lime and carbonate of soda) refuse bone black from sugar houses previously treated with dilute SULPHURIC ACID and PERUVIAN GUANO; wood charcoal dust and PLASTER of paris, *to retain the valuable portions of the ammonia*. Whole cost of this compost, $4.26, or one dollar thirty-one cents per acre."

Now, it is not to be presumed, that professor Mapes would have used *sulphuric acid* and *plaster*—sulphuric acid in *two forms*—"to retain the volatile portions of the ammonia," unless he had known that, by so doing, he would husband the ammonia, and make it go farther as food for his corn crop, besides prolonging its beneficial effects to the soil. He ranks high as an agricultural chemist, and, consequently, was well acquainted with the action and reaction which would take place in the substances which he composted together. His experience and knowledge taught him that *sulphate of ammonia*, one of the resultants of the elemental substances brought together, was very readily soluble by water, and that when so dissolved, the plants would take it up as food. Theory aside, the result of his experiment showed, in practice—the best test—that it was wise in him not to plague his imagination with any unnecessary apprehensions, that the transformation of the carbonate to a sulphate of ammonia, would deprive the plants of any portion of their ammoniacal nutriment.

Mr. *P. H. Pusey*, one of the most eminent farmers in England—who is a member of the parliament of England, and editor of the *Journal of the Royal Agricultural Society*, in an Essay which appears in the last volume of that work, has the following paragraph:—

"Ashes *alone*, whether of forest trees, crops, or good manure, will not suffice to give a fair yield of wheat on *exhausted land*. Upon land not exhausted, but abounding in rich soluble mould, the effect of wood ashes is very beneficial to wheat. When Mr. *Lawes* applied various salts to the amount of 619 lbs. to supply the mineral elements of a crop of wheat on exhausted land, without benefit, by the addition of 156 lbs. of rape-seed cake, (nitrogenous matter,) the crop was increased from 16 to 22½ bushels per acre. In another experiment, 146 lbs. of mineral salts, aided by 80 lbs. of SULPHATE OF AMMONIA, the crop was raised from 16 to 36¼ bushels."

This fact alone, stamps *sulphate of ammonia*, as being among the most efficient of manures, and proves, conclusively, how groundless and chimerical are the fears of "T. S. P."

We copy from the Genessee Farmer.

Effect of ammoniacal liquor of the Gas-house. "This liquor holds in solution a variable quantity of *sulphate of ammonia*, and sal-ammoniac." *

"On grass and clover Mr. Bishop applied 105 gallons an acre, diluted with 500 gallons of water, and obtained of hay, from the

Undressed ½ lb. per sq. yd., or 20¼ cwt. per acre.
Dressed, 1½ lb. " " " or 61¼ " " "
Increase 41 cwt. per acre.

* * If it is wished, however, to *fix* it or to render it less volatile—which in warm and dry seasons may sometimes be desirable—this may be effected by mixing it with powdered gypsum, in the proportion of 1 lb. to each gallon of the ammoniacal liquor, or by adding directly sulphuric acid."—*Johnston's Ag. Chem.*

The learned Johnston, whose business it is to know—and who does know—the properties and effects of *sulphate of ammonia*, does not apprehend any danger from its application; but, on the contrary, recommends its use, and exhibits the proof of its efficient action. The above experiment, and others which we have furnished, are worth as many opinions, as could be written or spoken from this until dooms-day.

In an "*Essay on top-dressing grass lands*," published in the *Transactions of the Essex county Mass. Agricultural Society*, written by *Charles L. Flint*, Esquire—an essay written with discrimination and knowledge, we find the following emphatic language, as to the propriety of mixing plaster with putrescent manures:

"Let peat mud be thrown in to absorb what would otherwise be lost. PLASTER *occasionally thrown into the yard is like money—I will not say in the Savings' Bank, but rather put to compound interest.*"

For what think you, is *plaster* recommended to be put in the manure heap? Why, for the purpose of preventing the *ammonia*—the very soul of the compost—from running away, as it may be formed.

Mr. *Flint* is an enlightened farmer, the author of a prize "*essay on the culture of Indian corn*," to which was awarded a premium by the Essex county Agricultural Society in 1849—a man who speaks from his own rich experience, and who practices what he teaches. Now can it be presumed, that an intelligent economical farmer—one who lives by the fruits of his labor, would expend his time and his means, by the use of *plaster* to *save the ammonia* of his manure, if he had not experienced the beneficial effects of the practice?

The next authority we shall present, though last, "is not the least in our affections," is that of a gentleman possessing a national reputation, both as an accomplished agricultural chemist and as an enlightened *practical* and *scientific farmer*. We mean Dr. *Daniel Lee*, the learned editor of the Southern Cultivator.

In publishing a communication of "T. S. P." in his journal for April, similar to the one which we published in our April number, and commented upon, Dr. *Lee* appends to it the following condemnatory paragraphs. Though brief, they are to the point, and prove, that his views of "T. S. P.'s" *advice*, are coincident with our own—each holding it to be as unsound as it is unphilosophic.

REMARKS BY THE EDITOR OF THE SOUTHERN CULTIVATOR.

"The above supposed discovery, so incompatible with the uniform experience of ten thousand

"practical farmers and well informed gentlemen," reminds us forcibly of the brilliant discovery of Dr. R. T. Baldwin, in which a shade is thought to feed plants by inducing "a chemical process like putrefaction, in any *soil whatever*, no matter how poor."

"T. S. P." seems to believe that to add gypsum to the dung of horses, cattle, sheep, and hogs, and especially to that of sea-birds, will greatly diminish the fertilizing force of such animal manure. Before the experience of one man can overthrow the equal experience of a thousand, he is bound to give weight and measure, times, places, and all the data by which such a result has been legitimately retained. Failing to do this, the thousand will still be governed by their former experience, not his."

Strong *condemnation* this, and the more to be appreciated, as it proceeds from a gentleman, who is as well qualified to speak as any other man in the country, being ripe alike in the *practice* and *science* of agriculture, and one of the best analytic chemists of the age.

Professor *C. T. Jackson*, in a late address before the Plymouth county Agricultural Society, says:—

"Knowing that urine, by decomposition, forms carbonate of ammonia, we are prepared to understand the necessity of mixing it in compost with peat and GYPSUM, so as to retain matters that would otherwise fly away in a gaseous form."

The whole address of professor Jackson, is marked by that high degree of profound learning—that intimate knowledge of the science of chemistry—which fully sustains his previous reputation, of being one of the brightest lights of his age. And it is not to be presumed, that such a man should be in error, in sanctioning the practice of mixing plaster with any highly concentrated animal manure.—Knowing the "*conservative*" effects to result from it, he hesitates not to resort to it as a "fixer," in order that the ammonia may be gathered to the plants, and not be permitted to "fly away," which would be the inevitable result of the "novel" recommendation of our friend "*T. S. P.*"

In order that there may be no part of the question involved in this controversy left uncovered, we shall now turn our attention to the effects produced by *inorganic*, and *organic* manures where the ammonia was fixed by the presence of Sulphuric acid, and those where the ammonia was unfixed. We do this, to *show*, that *Sulphate of ammonia is a most powerful—a most efficient manure*, and that it has attested its worth by *actual experiments* conducted by experienced practical farmers—while guano sometimes fails, as all manures will, under a concurrence of adverse circumstances.

We take the following experiments from Johnston's "Agricultural Chemistry."

EXPERIMENTS MADE WITH MIXED MANURES

By Mr. Burnet, of Gargrith, near Ayr, Scotland.

The crop was *Eclipse Wheat*—*soil* a loam with clay sub-soil, tile-drained and trench-ploughed—previous crop beans without manure—good dose of lime before sowing the wheat.

Application per imperial acre.	Produce. Straw. cwt.	Grain. bushels.	lbs.	Weight per bushel.	100 lbs. of grain produced of fine flour.
Sulphate of ammonia, 2 cwt. Wood ashes, 4 cwt.	35¾	39	54	60	66⅔
Sulphate of ammonia, 2 cwt. Wood ashes, 4 cwt.	44¾	49	6	60	63⅓
Sulphate of ammonia, 2 cwt. Nitrate of Soda, 1 cwt. Wood ashes, 4 cwt.	44¼	48	20	59	54¾
Sulphate of ammonia, 2 cwt. Common Salt, 2 cwt. Wood ashes, 4 cwt.	45	49	0	60	65⅔
No application,	39	31	48	61⅕	76⅔

EXPERIMENT WITH OATS AT LENNOX LOVE, SCOTLAND.

Manure—16 cwt. Rape-dust gave 45 bush. per acre.
2 cwt. of Guano " 68 " "
Unmanured soil " 49 " "

EXPERIMENTS ON A CROP OF WHEAT—SAME PLACE.

Manure—16 cwt. Rape-dust gave 51 bush. per acre.
2 cwt. of Guano " 48 " "
Unmanured gave 47½ " "

Results of experiment with different saline substances, mixed with farm-yard dung at the time of planting, in growing *Potatoes*. The quantity of land in each plot was $\frac{1}{8}$th of an imperial acre.

No.	Description of manure and salts.	Quantity per imperial acre.	Produce in pecks of 35 lbs. each.	Produce in bolls of 5 cwt. each per acre.	Produce in tons.		
			Pecks.	Bolls.	tons.	cwt.	qrs.
1	Farm-yard dung alone,	35 cubic yards,	71	35½	8	17	2
2	Common salt added to dung,	2 cwt.,	70	35	8	15	0
3	Nitrate of Soda, do do	1½ cwt.,	99	49½	12	7	2
4	Sulphate of Magnesia, do	2 cwt.,	91	45½	11	7	2
5	SULPHATE OF AMMONIA, do	1½ cwt.,	107	53½	13	7	2
6	Sulphate of Soda, do	2 cwt.,	64	32	8	0	0
7	Silicate of Potash, do	1 cwt.,	120	60	15	0	0

EFFECT WITH SULPHATE OF AMMONIA* APPLIED TO DIFFERENT CROPS.

Crop.	Manure.	Undressed. bushels per acre.	Dressed. bushels per acre.
Wheat,	Sulphate of ammonia from 1 to 1¼ cwt.	44	54¼
Do.,	" " "	31½	40
Oats,	" " "	49	50
Turnips,	Sulphate of ammonia from 1 to 1¼ cwt.	12¾	24½
Potatoes,	" " "	12¾	14½
Do.,	" " "	8¾	13½

*This Sulphate of ammonia, is made by adding *Sulphuric acid* to fermenting *Urine*, and evaporating to dryness.

EXPERIMENT WITH TURNBULL'S HUMUS.*

	bushels per acre.	
Wheat,	44	51
Oats,	49	45
	tons per acre.	
Turnips,	12¾	13¾
Do.,	12	17
Potatoes,	5¾	10¾

WHEAT CROP INCREASED BY THE SULPHATE AND MURIATE OF AMMONIA.

On a piece of ground cultivated in 1843, by Mr. J. B. Lawes, of Rotterdam, England, which had not been manured, the yield per acre was 16¾ bus. of wheat, and 1,115 lbs. of straw. This may be considered as the natural product of the soil, subject only to the atmospheric influence of that particular season. The same space of ground was cultivated and manured for three consecutive years, with the following results:

In 1844, the application of 560 lbs. of burnt bones, and 250 lbs. of silicate of potash, produced 16 bushels of wheat and 1,112 lbs. of straw.

In 1845, 1½ cwt. each of sulphate and muriate of ammonia, produced 31¼ bushels of wheat and 1,224 lbs. of straw.

In 1846, 2 cwt. of *sulphate of ammonia* yielded 27¼ bushels of wheat and 2,244 lbs. of straw.

Mr. *Cuthbert W. Johnson* in his "*Farmer's Encyclopediæ*," article "*manures*," in speaking of an artificial manure called "*Urate*," manufactured by the London manure company, thus speaks of it and its virtues:—

"It abounds with the salts of ammonia, phosphate of lime, and the animal matters of urine. It appears also, from the fine, dry state of powder in which the "*Urate*" is delivered, that it is admirably adapted for application by the drill with the seed. The quantity applied per acre, is about 5 cwt.; and, as it is almost entirely composed of organic matters, phosphate of lime (earthy salt of bones,) sulphate of lime (GYPSUM,) and various salts of ammonia, it is evidently a most powerful fertilizer, as well adapted for turnips as for the grass and grain crops." * "Mr. Manning, of Elstow, says, "I drilled a ton of *Urate* upon three acres, in rows 17 inches apart, upon a very *hot*, gravelly soil; each side abutting on this was manured in the usual way, with good farm-yard manure, about 14 loads to the acre. The turnips on the *Urate* were fit to hoe 7 days before the manured part; from their appearance, a stranger could point out the spot where it commenced and ended; the difference is still evident, and in its favor. Both the manured and urate pieces were sown on the same day, about the 14th of June. I certainly consider it a good artificial dressing, and its *fertilizing properties great*."

The confidence of professor *Johnson*, in the propriety of *mixing plaster* with *ammoniacal salts*—the happy effects of the action upon the manure when thus mixed, should, we think, go far, very far, to relieve the anxious cares of our friend, with regard to the *mischievous* tendency of the practice we recommend'd, of mixing *plaster* with *guano*; and, we trust, he has been convinced, by this time, that his fears were utterly groundless. If such "change has not come over the spirit of his dream," he must, indeed, be a bold man, and somewhat in the predicament of a member of a jury, who thought it passing strange, that every other member on the panel should be opposed to his view of the case, notwithstanding he was *wrong*, and they *right*.

If we are to form our judgment of the value of *sulphate of ammonia*, by the prices current of manures, in England, which we find in Mr. Cuthbert W. Johnson's "Farmer's Encyclopediæ," we should opine, that, after all, Sulphate of ammonia, cannot be so indifferent an article, as our friend "T. S. P." considers it. While Guano is therein quoted at from 10s. to 12s. and 6d. sterling, *sulphate of ammonia*, is quoted at 18 shillings sterling, per cwt. It is not, therefore, reasonable to presume, that British farmers, who pay more in annual rent, per acre, for their land, than would buy an acre of land with us in fee, besides being taxed up to the crowns of their heads for the support of government, could afford to pay $4.32 cents for a cwt. of manure, unless its virtue was very great, indeed. To suppose them guilty of such folly, would be to attempt to fix upon them a degree of stolidity of marvelous dimensions, indeed. Farmers are not the men to be easily hoodwinked in matters in which their bread and butter are concerned.

Again. The same enlightened author, in a recent paper on sulphate of ammonia as a fertilizer, in speaking of guano, remarks:—

"The salts of ammonia have hardly had the careful attention paid to them as fertilizers that their readiness of application, and other good qualities deserve. And yet, when the farmer, who is largely using guano, reflects that it is to these salts of ammonia that the best samples of the South American manure owe their chief value, he might reasonably be incited to experimentalize upon salts of ammonia, which, also having ammonia for their base, have been long manufactured in this country, and are perhaps the cheapest top-dressings that can on any soils, be employed. Of these salts, the *sulphate*, as the most reasonable, and as being a "fixed salt," (not volatile like the carbonate of ammonia) will, always, it is probable, obtain the farmer's preference." * "If the muriate of ammonia was as beneficial in its action as the *sulphate of ammonia*, it would be, as containing the larger portion of ammonia, the cheapest in the list; but as this is not the case, and for the reason to which I have before alluded, the *sulphate* will be commonly, I think, preferred by the farmer."

Falkner, the author of "British Husbandry," in detailing the mode by which the farmers of Switzerland convert their urine into a substance they call *gulle*, with a view of preventing the escape of the ammonia, states, that

"In the Black Forest, they always add some green copperas, (sulphate of iron) to the fermenting gulle in their tanks, experience having proved that this substance very much strengthens its manuring properties. Of this effect, indeed, we cannot have a doubt, since by this means a portion of the ammonia developed by this urine becomes chemically combined with the sulphuric acid of the copperas, and the resulting sulphate of ammonia, as we know, is one of the strongest saline manures."

And lest our friend should continue to think that the plants might be starved out, by the locking up process, which he charges to the account of plaster, after its sulphuric acid gets hold of the ammonia of the guano, for his relief of mind, we will state upon the authority of Dr. D. P. Gardener—high authority—"that plants possess the property of decomposing the sulphates,"—so that he need

*This *humus*, is *nightsoil* and *urine*, mixed with charcoal and GYPSUM, and dried by a gentle heat.

no longer tax his sympathy on their account, as they have a most notable fashion of absorbing the titbits of the earth, for the gratification of their appetites, and promotion of the robustious condition of their structures. If he will only give them the food, they will analyze and appropriate it—they have a wonderful knack of doing such things.

Having received several letters from Virginia, and elsewhere, expressive of great anxiety upon the questions at issue between our kind friend "T. S. P." and ourself, we have considered it to be our duty, to treat the subjects involved at large. Knowing that we were right, we feel solicitous to let our readers know, also, why we were so. Our motive we feel assured will be appreciated, and the length of this paper excused; especially as it embodies a great deal of information, which cannot fail to be of importance to an enlightened agricultural public.

We have never said or thought, that Guano applied alone, would not, under a favorable concurrence of season and circumstances, bring a good crop; but on the contrary, we have often advised it to be thus applied; for our policy, is, to *save* in all possible ways. To a *clay soil* charged with vegetable matters—to a *loamy soil*, similarly filled—to a *clover-ley*, and to a *grass-sward*, abounding in vegetable and animal remains—there is no *absolute necessity* for any agent to be used as a fixer of the *ammonia* in *guano—though, even in these cases, it would be better*, as we are well convinced, that the action of that excellent element of fertilization would, by such agency, be prolonged. But, in all applications of guano to light, porous sandy lands, we deem it *essential*, that *plaster*, or some other substance possessing similar properties, should be applied, to prevent loss by evaporation, in the way we have already explained.

Whatever we have said upon this subject, has been prompted solely by a desire to protect our agricultural friends from a wasteful application of one of the best of all manures—by the desire, that they should so apply it, as that it would carry their fields through a rotation of 3, 4, or 5 years; and not so that it might expend its virtues upon a single good crop, and render annual applications necessary. In our opinion, guano should always be followed by clover; and that, wherever such is the case, if the admixture of plaster and guano take place, and be ploughed in, a greatly prolonged benefit from the latter will be the result. The primary object of every judicious farmer, necessarily looks to the improvement of his land, and the growing of successive good crops—and not to the growth of a single crop, without regard to the future melioration of his soil. Taking this rational view of the subject of manuring, we have uniformly kept this principle in view, deeming it of too much importance in farm-economy, ever to be deviated from;—believing that it never can be, without a sacrifice of interest to the party forming the exception. Thus influenced, while we have strenuously urged upon our readers, the propriety of accumulating all the materials they could, susceptible of being converted into manure, we have as strenuously urged upon them, the propriety of mixing plaster or charcoal with all their putrescent and animal manures, in order that the volatile portions might be retained in the soil, to nourish the plants, instead of being wasted on the air. And we here repeat, what we have often said before, that pulverized plaster, or charcoal, should always be mixed with guano, and all other nitrogenous or animal manures, before such manures are ploughed in—and that the effect of such admixture, will be, greatly to extend the duration of their benefits.

From our knowledge of practical farming—from our knowledge of the applications of manures—and from our experience and observation of the results of experiments—we are fully aware, that the seasons, the manner of applying manures, and the mode of conducting experiments, all exert powerful influences upon results,—so that we have long since been taught, how improper it is to come to hasty conclusions, both as to the *cause* of success, or disappointment,—as the same manures applied one year, which may be fruitful in products, when favored by seasonable rains, may fail in another, under an opposite state of things. Plants can only take up their food in the earth, where there may be rain enough to dissolve such food, and present it to their organs of absorption in a liquid state. Let the food be once so introduced into their structures, and they will digest and assimilate it. But though, through the influence of the vital power, they can eat of the pabulum of the earth, when thus presented, they do not possess the ability, to draw sustenance from the soil, unless *water*, as well as manures, be present to prepare their food in such a way—to place it in such a condition—that they can partake of it. Hence it is, that seasons marked by timely rains and genial temperature, are fruitful ones—while those distinguished by long continued droughts, diminish the measures of produce, blight the hopes of the husbandman, and disappoint his expectations, no matter howsoever well grounded they may have been.

In conclusion, we may be permitted to observe, that where the teachings of science, and the *lifetime practice* of so justly distinguished a farmer, as was the late Col. John Taylor, of Caroline, Va., and other eminent practical and scientific agriculturists, concur in establishing a *principle*, in the management of manures, and the conservation of their most fertilizing element, those engaged in the culture of the earth, should hesitate long, and reflect well, before they permit the results of a few isolated experiments, to shake their faith in a doctrine that is thus strongly recommended to their acceptance. A *practice*, justified by the experience of nearly half a century, sanctified by common sense, and reposing on the foundations of philosophy and truth, should not be thrown aside to gratify lustings after novelty; nor be permitted to be upset by assaults, which, though they would demolish the structure that has been raised by years of patient research and labor, offers no substitute calculated to challenge confidence, or commend adoption. It was well said by Cicero, that "economy is itself a great revenue,"—so let farmers be cautious, how they waste the quintessence of their manures—how they give to the air, that which would ensure luxuriance and fruitfulness to their crops.

NEW OXFORDSHIRE SHEEP.—The following are the weights of a New Oxforshire Buck, owned by Mr. Wm. Jessup, of Balt. Co., and the fleeces of 8 of his Ewes, at a recent shearing:

Full bred Buck, weighed 229 lbs. live weight. Fleece 15 lbs. unwashed, but very clean. The fleece of 8 Ewes, ½ to ¾ New Oxfordshire, weighed 60½ lbs., being an average of more than 7½ lbs. to each—these were a fair sample of the flock of 150 Sheep.

GUANO.

To the Editor of the American Farmer—

I am called on by your correspondent "T. S. P." to answer the following queries. I do so for his gratification cheerfully, although questions are easier asked than answered.

1st. Describe the soils on which Guano has no effect?

Answer—Light sandy loam, resting on clay substratum.

2d. "What is their fertility?" Tolerable. Brings clover in favorable seasons well. Yields 800 lbs. tobacco or 8 bushels of wheat, or 6 barrels of corn per acre average, one year with another, without the use of manure.

3d. What their texture?

Answered in No. 1 query.

4th. What their chemical analyses?

Answer—Of 100 parts, the following are the constituents.

Alumina and oxide of iron,	002 28
Lime as carbonate (estimated)	000.09
Magnesia (pure)	000 07
Potash	000.11
Soda and potash as chlorides, 0.21	
Manganese	000 03
Soluble Silica	000.15
Phosphoric Acid	000.05
Sand—coarse	088.00
Fine sand	009.22
Parts,	100.00

Chlorine—a trace

Plaster—a trace.

The last query of T. S. P. is fully answered by the above analysis, if he will compare it with an analysis of soil on which guano does act so powerfully.

From the character of the writings of your correspondent, I presume he is a practical agricultural chemist; therefore, I am emboldened to ask of him a few questions, which he will much oblige me by answering. How are we to know good from bad Guano? Why is not one sort of Guano suited to all lands as well as another sort? How is it that so many fail with Guano, when used even as he suggests it should be used? What is the best manure for a soil like mine, as given above? Will his experience allow him to say whether Bones or Lime is best?

I have no doubt "T. S. P." is a good chemist and able theorist, but before he again endeavors to show that Plaster is injurious to Guano, or its action on the soil or vegetation, I would advise him, as an unknown friend, that his initials are those of words which may benefit him hereafter, as they have done most men, to wit, *Time, Study, Practice.* Take *Time, Study* and *Practice* your theories. Mr. "T. S. P." is the advice of him who readily admits that his phraseology may be wrong, and will take your advice in future, and write "it is only on particular lands that guano is of *no* use," instead of "*it is only on particular lands that guano is of any use.*"

I am, I admit, but a P. P. alias *poor planter*, but still am what I am, a searcher after truth, an experimentalist—one who gives his mite from his *own experience* to his fellow planters for *their* profit, and is nothing more than a *P. P. P. P., or plain, practical*

Patuxent Planter.

ARTIFICIAL GUANO.—"Dr. *Robert Hare*, of Philadelphia, one of the most distinguished chemists in our country, has invented a method of forming artificial guano directly from fish, by the agency of sulphuric acid. He has secured letters patent for this invention, but will, I understand, ere long give it to the public. By this process the nitrogenous matters of the fish are directly converted into the sulphate of ammonia, while the carbonaceous matter is changed into a sort of humus, and the bones are changed into super-phosphate and sulphate of lime, all of which matters are good manures."—Dr. *C. J. Jackson's Address.*

The *theory* is that *one pound of fish* will fertilize 100 lbs. of common loam. Taking this fact as the datum, on which to base an estimate of the value of prof. Hare's "artificial guano," it will doubtless be found in practice, to exert a most powerful influence on vegetation, and he has acted wisely in economizing the ammonia, by using sulphuric acid, thereby preventing the escape, by evaporation, of the most active principle of fertilization, and keeping it in the soil to be taken up by the roots of the plants when required by their wants.—*Ed. Am. Far.*

CHAPPELL'S SALTS.

BALTIMORE, May 1st, 1851.

To the Editor of the American Farmer—

You published in your September number a letter from me to Messrs. Chappell relative to the experiment then making by me on three parts of the same *worn cut* field, which previously had only yielded one and a half barrels of corn to the *whole* field, and which went by the name of the "barrel and a half" field. You may recollect that one part was dressed with 300 pounds of Peruvian Guano to the acre, the second part with 500 pounds of Chappell's Salts (something less than two barrels) to the acre, and the balance with the same amount of Chappell's Salts *and* 100 bushels of lime to the acre.

The wheat was cut, stacked in the field, and in last March threshed out. The yield was 19½ bushels per acre. No separate account of the yield of the respective portions was kept. The wheat on the Guano portion was, by estimate, about two bushels more to the acre. The whole field is well set in clover and timothy; on a par with the *best* in the neighborhood, which embraces land as fine as any in the State. But a surveyor could not more distinctly plot out land, than is manifested by the lines made by the comparative vigor and height of the clover on the respective pieces of the field. The Lime and Salts' part is much the best, and the Salts' part is as much superior to the Guano part, as it falls short of the Lime and Salts' part itself. But *all* is fine. Without wishing to influence any one's deductions, my reason has inferred from the experiment, that as the great reliance is on clover for the permanent benefit to exhausted lands, the Salts is to be preferred to the Guano; I have accordingly ordered and used 20 barrels of it this spring, dressing a corn patch at the rate of two barrels to the acre, in union with a light supply of lime, intending to set it in clover and wheat in the fall. The above statement shows that both Guano and Salts have each most liberally repaid outlay and a handsome profit. Respectfully,

WM. HENRY NORRIS.

A correspondent at Petersburg, Va. writes us that "the prospects are very good for an early and very productive crop of wheat," and he hopes it will enable some of his friends to subscribe to our "invaluable periodical."

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TERMS OF THE AMERICAN FARMER.

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At the *State Agricultural Society Rooms*, No. 128 Baltimore st. over the "American Office," 5th door from North-st.

Volume 7 of the American Farmer.

The 7th volume of this journal, commences with the July No. The publisher is happy in being able to state, that the patronage extended to it, is continually on the increase, and that the prospects for the coming volume are flattering in the extreme. Indications from various sections induce the belief that the increase will considerably exceed any that has preceded it.

Amongst the numerous correspondents, whose essays have given such celebrity to the "FARMER," the name of EDMUND RUFFIN, of Va. stands most prominently—during the past year he has been a regular contributor to its pages, and we are happy in being able to announce, that he has consented to continue his labors in behalf of Agriculture, so long as it may suit his convenience, through the pages of the Farmer. This announcement, we are sure, will be received with much satisfaction by our numerous friends in Virginia, as well as in other States.

To encourage and stimulate our friends and the well wishers of agricultural improvement, in their endeavors, we offer the following prizes for the largest lists of subscribers, to be received up to 8 o'clock on the first evening of the meeting of the State Agricultural Society, at its annual meeting the ensuing Fall—viz:

PRIZES OFFERED.

For the largest list of subscribers,	$50
" 2d largest list,	35
" 3d do do	25
" 4th do do	15

The subscriptions will be received at the club prices offered by us below, the CASH for which must be paid before the time at which the competition closes. Thus, those who may obtain lists at the regular subscription price of $1, if they will make up a club of 6, will be furnished the same at $5

"	13,	do do	10
"	30,	do do	20

One feature of the above offer to be noticed, is, that the names and cash of any who are NOW subscribers, will be received—heretofore it has been confined to *new* subscribers only.

The Prizes will be paid in cash, or in silver ware, or in any agricultural implements which may be exhibited at the State Exhibition, at manufacturer's prices. The names as received can be sent on, with the cash, and the number will be counted on the day specified, and announced at the time of the giving out the prizes of the State Society. All orders to be addressed to SAML. SANDS, Publisher,

128 Baltimore street, Baltimore, Md.

☞ Our brethren of the press, will place us under obligations by publishing the above.

☞ The paper from the pen of Mr. Ruffin in this No. on Harvesting Wheat, is very seasonable, and we think our readers will universally admit, that it is worth many times the amount of the subscription to the Farmer for a whole year—We urge every wheat grower to read it at once, before he puts the paper aside. We would invite attention to some remarks on the same subject under the lead of "Work for the Month."

☞ The article on the subject of mixing Plaster with Guano, and other manures, will, we think, be found conclusive on the subject—As an immense quantity of guano will be used this fall, we feel satisfied that the subject is one of vast magnitude to the farmers—Independent of the particular subject which has called forth this treatise, it will be found a *complete text book* on the use of manures of almost every description—especially on the application of Guano, of which frequent enquiries are made.

The above, occupying so large a portion of this number, has prevented us from giving the interesting paper on the subject of Rust, which we promised in our last—Also a paper on Saving Corn Fodder, by "G. H."—one by Mr. Jno. Feast on the Culture of Sea Kale, some extraordinarily fine specimens of which were exhibited by him at a late meeting of the Horticultural Society—[Mr. F. has some plants of this variety for sale, also superior Ruta Baga, and green top yellow Scotch Turnip seed, the best for field culture.] Also an article on the use of bone dust, and various others—which we hope to present in the July No.

VOL VI.—Many subscriptions have been received since the 1st Jan.—As the index to this vol. will be received by such, and after noticing the number of valuable papers contained in the first part of the volume, they may desire to obtain the back numbers to complete the same, we are prepared to furnish them to all who may desire it.

VOL IV.—Having reprinted a portion of this volume, we can supply those who have before applied for it.

A PLEASANT WAY OF DOING THINGS.—We took occasion in our last, to call attention to the fact, that one number more would complete the present volume, with a request that subscribers to the "Farmer" would be prompt in sending on their own subscriptions by the commencement of the new volume in July, and suggesting that each one should endeavor to send on the subscription money for his neighbor. We are happy to announce, that the suggestion has been already acted on in a number of cases, for which we are truly thankful.

We have from time to time received many tokens of the same import with the following, both received the same day, but we must content ourselves with their publication, and the writers will please excuse the liberty we have taken in giving their names with their notes. The first is from Dr. Wallace, whose subscription had been paid up to 1st June. KING GEORGE, VA. May 7th, 1851.

DEAR SIR,—The May No. of the "Farmer" is just to hand, and puts me in mind of doing that which I had promised myself some time since to do, viz: of sending you a V. I have only been a subscriber for two years, and on the merits of the past, I am inclined to risk the subscription price for five years in advance. Below you will find a check on the Farmers' Bank of Fredericksburg, Va. for the amount, the receipt of which you will be kind enough to acknowledge at your earliest convenience, to Yours, &c. MICHAEL WALLACE.

The second is from Col. W. B. Slaughter, who happening to call at our office, about 12 months ago, when he had just purchased the horse to which allusion is made by him, was induced to subscribe to the Farmer for a year. He has perused it during the year, and gives the following gratifying evidence of *his* appreciation of its merits.

CULPEPER C. H., VA., May 5th, 1851.

To the Editor of the American Farmer—

DEAR SIR,—One year has elapsed since I subscribed and paid for the Farmer, and although I have been an occasional farmer for ten years, I am satisfied that I have derived more information on the subject of agriculture and other kindred subjects from the reading of your journal, than from all other sources during my farming life. I cannot resist the temptation of offering to you a more substantial proof of my gratitude for benefit received, than the mere acknowledgment of them, and therefore enclose you five dollars, as my subscription for the next five years.

I am making some composts according to the suggestions of the Farmer, and may some day give you the results of my experience.

Our horse "Morgan Messenger" will be let to eighty or ninety mares this season; he is greatly admired, and promises to improve our present stock very greatly, judging from the fine colts that have just appeared of his get.

Respectfully, your ob't serv't.
W. B. SLAUGHTER.

Some of our "arrearage" friends have also promptly responded to our call, and taken the precaution to put themselves some distance ahead, for fear of accidents. One of these, in Loudoun Co. Va. no doubt speaks the sentiments of most others in the same position, when he says,

"It certainly is not the amount, that makes us so backward in forwarding the "Almighty Dollar," nor that we have enough of your valuable periodical, but that most unfortunate habit of procrastination, of which we all "resolve and re-resolve" to break ourselves of, but which we never do, especially where Editors are concerned."

We hope we may be spared the alternative to which allusion was made in our last, and that we shall not have occasion to drop a single name from our list.

Thomas R. Joynes, Esq. of Accomac, in forwarding his subscription for the next vol. remarks:

"When the first of every month arrives, I am very impatient for the arrival of your pamphlet, and I think I am *very well* rewarded for the annual expenditure of a dollar to procure it."

A subscriber in St. Mary's Co., after remarking that he was satisfied "that a farmer had better pay twelve times its cost than to be without it," adds "I hope to see the *American Farmer* in every family in my neighborhood, believing it the next book to the Bible, for general instruction and worldly matters."

☞ CHEERING.—A gentleman in Eastern Virginia, who has, during the past year, forwarded us the names of a number of subscribers, writes us that he expects to send us 100 new subscribers for the volume which commences with our next No. We are much his debtor already, and he will please accept our thanks for this renewal of his kind labors in behalf of our journal.

AGENTS.—Post Masters, and all persons friendly to the cause of Agriculture, will oblige us by acting as agents for the "FARMER." We hope every subscriber will feel himself constituted an agent, and with his own subscription for the coming year, forward the names of some of his neighbors.

Subscribers in the city of Petersburg and its neighborhood, can forward us their subscriptions through our friend F. C. Stainback, who can always be found at the office of John Rowlett, in said city.

NOTICE.—As announced in our last, with this No. we will cease to send the "AMERICAN FARMER" to many of those who may be in arrears, and who shall fail to settle before the issue of our next number in July. We regret the necessity of parting with any of our readers, but we take it for granted that the little interest they have manifested in "squaring up," is an indication of their indifference to continuing on our list. Any misapprehension on the subject will be promptly corrected.

ESSAYS
ON
Various Subjects of Practical Farming.

BY EDMUND RUFFIN, OF VA.

MANAGEMENT OF WHEAT HARVEST.

In preparing the following statement it was my purpose to present merely my own practice and the opinions founded thereon; and not the practices or opinions of other farmers, whether better or worse, unless by special reference. Neither do I presume to offer my practice as the best example for other farmers; but simply as the procedure which my circumstances have induced or compelled me to adopt, and which the general results have seemed to sanction or approve.

The propor time for reaping wheat, is when the grains have just reached the "*doughy*" condition; or when they are still so soft as to be easily mashed between the finger and thumb. The interior of the grain is then a soft glutinous adhesive pulp; but having no remains of the white fluid, or "milk," the presence of which indicates the preceding and too immature condition. But as no considerable space (if even the smallest spot) of wheat can have all the grain at once precisely in the same "dough state," I do not wait for it to be complete. It is safe to begin to reap when not more than one-tenth part of the heads (of latter growth) in any one place of sufficient size, have still a little milk to exude from the mashed grains. And in the progress of reaping the more ripened wheat, the same indication and rule govern as to any greener spots or margins. The greener grain, still showing a very little milky fluid, and the pulp softer and less glutinous than of the "dough state," will doubtless lose something in shrinking. But such loss I have never found appreciable in the general result. When reaped in the proper "dough state," I do not believe there will be any loss of size or weight of the grains by shrinkage, more than if left standing until dry—while there is great gain from the earlier reaping, in forwarding and securing the harvest, and thereby avoiding the hazards of bad weather.

The thus reaping wheat as much as possible in so green a state, has been condemned by the opinions and even experiments of many farmers, some of whom I respect highly as authority. Most of

such experiments were comparisons made of different heads of wheat, apparently equal in size, or number of grains—or of certain larger numbers of grains separated, of two samples—the one cut off green, and the other suffered to stand until fully ripe and dry. All such results are liable to objections. 1st. It is very difficult, if not impossible, to make fair and accurate comparisons as to size and quantity of any two heads of wheat, the one cut off green, and the other left to stand until dry. 2d. Even if such comparison could be perfectly accurate, still it would be made of wheat saved from every damage or danger from bad weather—and not exposed as a large part of every crop must necessarily be, even in the most favorable season for harvest.

Now even if it were true (which however I do not admit or believe) that a head of wheat cut off in the dough state lost something of the size and weight it *might* attain if left to stand until quite dry, and then secured without any damage from rain—still it might well be that such (possible) loss would be more than compensated in the avoiding, by early reaping, the heavier losses of wheat which *always* attend the latter part of a protracted harvest. This is the true question. Even with beginning to reap wheat in the "dough state," it is rare that a full crop of wheat can be all secured before much waste has been suffered by over-ripeness, aggravated by bad weather. Under such impressions, I have not resorted to the tests of any comparative weighings or measurements, or particular experiments. But in my general experience of reaping thus early, extending from 1822 to 1851, I have never had reason to suppose that any loss, either general or particular (unless in the small proportion of "milky grains,") has occurred.—The general gain has been believed to be very considerable, and for every harvest; and one particular crop was by this early reaping nearly all saved, just in advance of a long rainy spell, which destroyed fully half of the neighboring crops, then mostly standing. This occurred nearly 30 years ago, when the general practice was to begin reaping later than is now usual on nearly all wheat farms.*

Aiming then to reap wheat as early as is safe, the operation is usually begun as soon as the most forward spots, of a few acres in size, have reached the "dough state." Sometimes then the straw and chaff are yellow, and riper in appearance than the grain; in other years, the green color of the plant, and its sappy condition, more or less remain. Different measures of time, according to such different circumstances, will be required, previous to the subsequent operations of binding and putting the sheaves into "shocks."

I use for reaping only the scythe and cradle.—Since coming to my present farm, I have had great difficulty in getting the wood-work of cradles made heavy enough. Cradles made as light as usual hereabout are more laborious to work in good wheat, and less efficient, than heavier cradles. My scythemen complained loudly of the lightness of the ordinary cradles, which I was compelled to use for several years.

When wheat through the country was generally a very light growth, the reapers were taught to catch the wheat cut by each sweep of the scythe, from the cradle with the left hand, and then let drop the handfuls on the ground. This was best for such very thin wheat. But for a heavy growth, it would be better if our men could empty the wheat from the cradle, or "strew" it regularly along the row, as is done in some other parts of the country. My practice, then, of "handing" the wheat from the cradle is not deemed the best, but is the result of the old and inveterate habits of the laborers. It would doubtless be an improvement if we could introduce here, for all heavy wheat, the "strewing" instead of "handing"—and also the cradles best suited for the former practice. Perhaps a still greater benefit may be found in the substitution of reaping machines—which even now

* From memoranda written at the times of the occurrences, I am enabled to state the days of beginning to reap wheat for a number of years. For the intervening years, omitted, no such note was made, or preserved. Coggins farm, the first subject of my labors, is high, hilly and mostly sandy land, on the south bank of James river, and about 24 miles S. E. from Richmond. Marlbourne farm, 13 miles N. E. from Richmond, and on the south of the Pamunkey river, is low and flat land, the soil of various textures, but a large proportion very stiff. Vegetation generally, as well as the first ripening of wheat, is always some days more advanced on the former than the latter farm—though they are not more than 25 miles apart.

Reaping wheat begun		at Coggins	
1818, 1819,	Golden chaff wheat, and ripe	June 25th 23d	
1822,	Mountain Purple straw and green,	8th	
1823,	"	13th	
1824,	"	11th	
18:5,	"	10th	
1826,	"	12th (*a*)	
1827,	"	16th	
1828,	"	12th	
1829,	"	19th (*a*)	
1831,	"	16th	
1836,	" (crop almost destroyed by rust)	27th (*b*)	
1837,	"	16th	
1839,	"	13th	
1840,	"	8th	
1841,	"	21st	
1842,	"	13th	
1843,	"	19th	
1844,	"	3d	At Marlbourne
1845,	"	6th	11th
1846,	"	8th	11th
1847,	"	14th	14th
1848,	"	7th	7th
1849,	" (All good or forward growth cut down by freezing 15th to 17th of April,	21st	20th (*b*)
1850,	"		19th

From 1822 to the present time the same kind of wheat has been cultivated, first known as the "Mountain Purple straw," and more lately distinguished as the "Early Purple straw." During all this time my usage and aim have been to begin to reap as soon as enough wheat had reached the "dough state." But a few of these beginnings (marked *a*, *a*,) were not made quite so soon, because of the pressure of other work; and in some others, (*b*, *b*,) the ripening of wheat was much retarded by peculiarity of season, or disease of the crop.

are used by most of the good farmers of my neighborhood. But because of their great liability to get out of order, the difficulties of working them, and especially my own ignorance of machinery, I have feared to attempt the use of a reaping machine.

After getting into full operation, each reaper is followed immediately by a "binder," who ties up into sheaves all the wheat cut by the reaper. In light or ordinary wheat, this is light work for the binder. But it is heavy service, if well performed, in heavy wheat, or if following a scattering and wasteful reaper.

The wheat is thrown by the reaper, as "handed" from the cradle, in piles of one, two or three handfuls together—evenly as may be, and the stalks lying at right-angles to the direction of the reaper's row. Each binder carries in the right hand a very light wooden rake, with six teeth, and the handle 18 to 22 inches long, which is conveniently used to straighten and gather up the wheat for the sheaf, and also to rake up most of the scattered stalks. The sheaf is made no larger than a band, made of a single length of the stalks of wheat, can securely tie up; and if the straw is very green, or moist with dew or rain, still smaller sizes of sheaves is required.

In the beginning of reaping, usually there is not much wheat ripe enough, and there is no need for the most rapid work; and the perfect safety of the first reaped wheat is more important than greater speed in the progress of the work. Then, contrary to the later and general practice, the reaping sometimes proceeds some hours in advance of the binding. When so separated from the reapers, the binders always work much more slowly. But this loss can then be submitted to, for the attendant benefits of giving some time for the straw (and any intermixture of weeds) to wither and partially dry by exposure before binding. The bands then tie better; and as the green straw has then withered and shrunk somewhat, the band will not become so much looser afterwards, by the further drying of the sheaf.

The sheaves are left lying on the ground, in the rows where bound, but none in the water-furrows. There they remain, in the beginning of harvest, and if rain is not threatened, from 3 to 8 hours (besides the whole night, if intervening,) after the binding—or about a day later than the reaping—when the sheaves are brought together and put into "shocks" or "hand-stacks." The delay of this operation (and which is only permitted for wheat still green, and also in settled fair weather,) permits the wheat to dry something more, and thereby is safer from becoming mouldy in the centre of the shock. The sheaves also are of less weight to the bearers, (who are mostly small hands,) and they stand more firmly in the shock. If an unexpected rain should occur, there will rarely be any damage done to sheaves caught lying on the ground—and still more rarely if the wheat is green and fresh. And this observation applies to sheaves so caught by rain, in any state of dryness, and any later time of harvest. If the earth is dry, and absorbs the rain as it falls, so that none shall continue to soak any heads of wheat—and if the rain, even if heavy does not last more than a few hours—the sheaves will mostly dry as they lie, and without any damage. This result has been found after (undesigned) exposure for 8 days, during which a heavy rain had fallen, and had cleared off. But much delay and risk of exposure to rain need not be permitted.—Should a drenching or long continued rain catch sheaves lying on the ground, they should be soon afterwards set up in small "stooks" of 4 to 9 sheaves each. They will dry in that state, if drying weather follows; if the weather continues damp, the stooks must be shifted, so that the wet sides of the sheaves shall be turned to the outside of the stook. But such damage, or any danger of such, has never occurred to me, except in the remarkably wet harvest of 1846. Then, and in any such long continued wet weather, no method and no precautions can prevent great loss. Then, indeed, the sheaves sprouted when left only 24 hours on the thoroughly wet ground. But also in stooks previously set up, and even in the still standing stalks, much of the grain sprouted.

The things most important for the perfection of harvest labors, are 1st. that the wheat shall be cut well and laid evenly and regularly by the reapers; 2d. that the binders shall gather up the wheat without too much scattering and waste, and tie the sheaves securely; and 3d. that the "shocks" are built and roofed over well, so as to stand erect, and to exclude rain. Of course, there must be more or less of short-comings in the efforts to reach all these desired ends.

The operations of reaping and binding need not be described, and indeed would scarcely admit of description. As to the building of shocks, perhaps directions may be advantageously given to those who need such instruction. My own heavy early losses, which were suffered from my want of knowing how to build shocks, would be enough to impress on me the importance of better knowledge. And even at this much later time of generally improved practice in harvest operations, there are more than half the farms in lower Virginia where a wheat shock has never yet been properly built.

It formerly was my usage, as it still is of some other and better farmers, to put all the sheaves (of green wheat) as fast as bound up, into "stooks" of 8 or 10 sheaves each. These stooks are made by setting three sheaves on their stubble ends, about 12 or 15 inches apart on the ground, and forming by their position a triangle—the heads of the sheaves being brought together to a central point. Then three other sheaves are set around and in close contact, each one on the ground at the opening between two of the inner three sheaves. A few more may be added, to the outside, to give proper size and shape, as desired to suit the weather. Each stook when finished, presents roughly the shape of a small cone. In such stooks, the wheat will usually cure well; and after a day or two of good weather, may be put into shocks of the largest convenient size.

But I object to and have abandoned this plan of general stooking (for green wheat,) because of the labor of twice handling and moving, and the greater waste, by shedding stalks from the sheaves, in these handlings. If the weather should be good, the sheaves would be as safe if left lying separately on the ground. A light, or transient though much heavier rain, would not hurt the sheaves, either in stooks, or lying on the ground. If a storm of rain and wind occurred, the stooks would be nearly all overthrown, and the wheat would be but little safer than if the sheaves had been lying on the ground. And in case of such a storm, or of any considerable rain, stooks may and ought afterwards to be set up, to permit the sheaves to dry. It does not

often happen, from such an occurrence of heavy rain, that I lose anything from the omission of building stooks before the rain occurs.

In beginning to build a "shock" the first three sheaves are set up as in putting up a stook. Others are set around the first, in a circular form, the "butts" or stubble ends of the sheaves set firmly on the ground and close to the inner sheaves, and the heads pressed inward towards the central point. This foundation is thus continued to be enlarged until of sufficient size (according to the length and dryness of the wheat.) This first part of the shock approaches in form a truncated obtuse cone. The inward inclined heads of the opposite outside sheaves are about 2½ to (for largest sizes) not more than 4 feet apart. The sheaves of the later rounds should have been firmly pressed inward, and all set closely together, so as to be as compact as possible. The roofing is begun by setting the stubble end of a sheaf upon and partly into the bands of two of the outside sheaves; and so continuing a course around—putting each sheaf over the joining of two others below it, when spaces permit. These sheaves, forming the first course of the roof, have also their heads pressed inwards to the centre; and they are prevented from slipping down, by some of the stubble ends of every sheaf sticking into the bands of the lower sheaves. This first course serves to reduce the amount of *cutting off* before exhibited, but still preserves the general form of a truncated cone, rising higher than before. Another course of sheaves is then laid on in the same way, rising still higher and approaching nearer to a point. The sheaves are laid on in the manner of shingles or slates to cover the roof of a house. Each sheaf covers the "break" between the two of the course below; and the heads of every sheaf are covered by the straw end of the next course above—so that no heads (except of the "cap") are exposed to rain, so long as the shock does not tumble, or lean so much as to disorder its roofing, and admit rain.

The last course carries the sheaves to a point, as high as the builder, standing on the ground, can well place them. The shock is then (or ought to be,) nearly a perfect cone, of height greater than the diameter of the base. The last 6 or 8 sheaves used to bring the top to a point, should be of smaller size. And as the greenest wheat, (occurring in spots,) is bound into particularly small sheaves, these serve well for this topping. Moreover, by being so exposed to air, if put up as soon as reaped, these sheaves of green wheat will cure safely.

The "capping" and finishing of the shock is next to be done. For this, a very large sheaf is made by tying a band of double length securely around and near to the stubble end of the wheat, put evenly together. The sheaf is then placed on the ground, resting on its stubble end, and so held while the laborer bends down at the band, and outward, all the stems, by handfuls, beginning at and around the outside, and so proceeding around until reaching the central stems. Being bent outward, the heads then are the outside of a circle, lying on the ground. In this flat out-spread shape, the sheaf is lifted by a fork stuck into the tied part, as high as over the point of the shock, then placed thereon, reversed, so that the tied stubble end shall make the pointed top of the cap, and the loose stems of the cap-sheaf shall fall upon and cover all the upper part of the cone. The sheaf is properly adjusted; and some of the heads of wheat, hanging downward, are fastened into the bands of the underlying sheaves, on four opposite points, so as to prevent the cap being easily blown off by high winds. A light ladder, 3 to 4 feet long, set against the shock, will aid the capping of large shocks.

If properly so built, no heads of wheat will be exposed to rain, except those (hanging downward) of the cap sheaf. And though these few are wetted by every rain, they are also so exposed to the air and sun, that they soon dry—and will keep sound in any but wet weather of unusually long continuance.

According to the size of such shocks, and to the quality of the crop, they will hold from 2 to 5 bushels of wheat; or more usually 2½ to 4. If the weather is threatening, and if sheaves are very green, or are actually somewhat moistened by rain or dew, it will be safe and proper to put up the wheat in small shocks. When this has been done for fear of worse weather, I have found both green wheat and damp sheaves to cure well. And in other cases, where no danger was feared, and less caution used, I have had both green wheat and wheat damp (from previous rain or dew,) to become mouldy, in straw and chaff, in the middle of the shock; but without any other apparent damage to the grain than some discoloration. Some of the most mouldy heads, and still moist, as found when beginning to thrash wheat, were tried as to their power of germination; and of 100 such grains, 95 sprouted.

But though wheat may thus bear to be shocked in a green and even in a wet state—and though it is expedient to do so in particular cases, when a worse condition is feared, from the continuance or threatened approach of wet weather—still I prefer to avoid such procedure in ordinary practice. It is not only necessary that wheat shall cure and dry finally and thoroughly in the shock, and free from damage in passing through its "sweating," (which every shock goes through,) but it is also very important that the wheat shall be dry as early as the time to begin thrashing. If this operation has to be delayed, because the wheat is not then thoroughly dry, the completion will be late, and the shocks exposed to much more damage from a rainy spell.

The intervals of time, as above stated, between the reaping and the binding, and between the binding and the putting into shocks, are deemed proper, and allowed only, in the early part of harvest, when the wheat is green—or afterwards in case of wheat being reaped when moist with rain or dew. Of all these causes of danger, or damage, the moisture remaining from heavy dew seems to be the worst. The thinnest growing wheat, and still more if it is "dead-ripe" and therefore cuts badly when dry, should be reserved for reaping in the mornings, while dew remains. A light dew need not stop binding. But if there is heavy dew, and it is necessary to reap during its continuance, the wheat ought to lie long enough to nearly dry before being bound, and still longer before being put into shocks. The heaviest dew need not delay the building of shocks, of sheaves bound dry the preceding day—as their moisture will be only on the upper outside.

Having considered these subjects of exceptions to general operations, the latter, though far the more important in amount, can be despatched in fewer words.

Usually, before half the harvest labors are over, the remaining wheat is so ripe, by the time it can be reaped, that it may be shocked immediately. Much earlier, (if indeed not from the beginning,)

the binding should have followed immediately after the reaping. After being thus brought together, there is thereafter permitted as little interval between these different operations as possible. Still, in settled fair weather, there will be no objection to there being enough sheaves left on the ground over-night to occupy all hands except the reapers, in putting them into shocks, the next morning, during the continuance of dew too heavy to permit binding. At such times, the younger men not yet accustomed to reap, may learn to use the cradle, in the lightest wheat.

When the labors of harvest are in regular progress, there is but little to be feared from rainy weather, except so far as it will delay the completion of the work, and injure the standing wheat All the reaped wheat may be (if desired) safe in the shock within two hours after being cut down. If sudden rain threatens, by aid of the reapers and binders, all can be secured in half an hour. But the danger from delay of reaping, and of rain to the yet standing and already fully ripe wheat, is very great; and this danger is ten-fold increased by a late beginning of harvest. By beginning to reap the wheat when green, there is an advance of 4 to 6 days gained; and if afterwards interrupted even for as long a time during the latter part of harvest, by a spell of rain, the farmer is then precisely where he would have been without that delay, if waiting at first for his wheat to be fully ripe and dry. On the other hand, if after so waiting, such a rainy spell were then to occur, the crop would be nearly destroyed. If not actually sprouted, the quality of the grain would be injured by every wetting and drying—and even if not lodged in mass, the wheat would have its heads so turned down, that the loss in reaping would be enormous.

My harvest labors are too heavy for my limited force, and therefore they cannot be executed very perfectly. Especially, there is always great scatterings and waste of wheat by badly operating cradles, or some awkward reapers, and which cannot be, or is not, raked up and saved by the binders. No laborers, either reapers or binders, worth having, can be hired here; and all who seek for such employment in harvest, studiously avoid all farms where there is any heavy growth to reap, and no whiskey is permitted to be used by the laborers. I have ceased to seek for or to obtain any aid of harvest hirelings.

To the foregoing general statements of practice and opinions, I will append the particular facts, as to weather and operations, of two different harvests. The statements are extracted (in substance) from my farm journal. The entries concerning or indirectly relating to harvest operations or difficulties only will be presented. The two statements are selected from the number contained in my farm journals, for the following reasons: Both the crops referred to were harvested within the few past years, so that most farmers may recollect the weather and other general circumstances of each time: In one of the cases, the harvest was remarkable for the worst weather I ever had to encounter; and through the other there was generally fine weather, but the crop was unusually heavy, and the labors were protracted, and thereby the difficulties and risks much increased. A tabular statement of my latest harvest will also be added. The manner of proceeding, in all cases, agreed with the foregoing opinions and directions:

Harvest operations on Marlbourne farm. Extracted from my Farm Journal. 1846.

[The spring season of 1846, to the end of May, had been generally and remarkably rainy.]

"June 1. Thick mist all forenoon. At night, heavy rain.

"3d. Dryest and lightest parts of corn-field just fit to be ploughed. [Continued generally cloudy, or misty, and cool, with some light rains in all the next five days.]

"9th. Slowly raining from 7 A. M. until late at night. Very cool.—The wheat seems ripe enough to begin reaping to-morrow; but in the very bad condition of the corn-field, I must give it another day's work before leaving it.

"10th. Still cloudy—and all day nothing but variations of thick mist, thin drizzle, or, in the cessations of both, damp and cold air. [Of course, better weather to begin harvest was waited for.]

"11th. Steady rain from last night to noon, making the corn-field everywhere too wet for working. Afternoon, began to reap wheat, as soon as the rain had dried from the straw. Continuing cloudy—and several scuds of misty drizzle, which did not cause any cessation of the work. Binding the wheat into sheaves, as fast as reaped, and setting up in stooks immediately after.

"12th. Raining heavily last night—and continued at intervals and slowly for nearly all day, though worse in forenoon. Nothwithstanding, despairing of doing better by waiting, reaped and bound wheat about 6 hours of forenoon. Then, fearing to proceed, discharged the hands, because there was no other work for them. Never had I a corn-field so much needing both ploughing and weeding, and yet it is too wet to be touched, when weather ought to forbid reaping wheat. The condition of both crops, but especially the wheat, is awfully alarming. It is now nearly throughout just in the state to begin reaping; and even if good weather were now to come, the wheat must lose much before the harvest can be entirely finished. But there is every prospect of bad weather continuing; and if so, of ruin to the crop, whether cut down wet, or left to stand, waiting for dryer weather. Besides all the previous rains, and cloudy weather, there has not been any sunshine during the last five days, and there has been more or less rain on all of them.—Quite cold.

"13th. Steady rain, and sometimes falling heavily, from morning until noon—and showers at intervals afterwards, into the night. Thick damp air, or otherwise mist, at all other times. At 2 P. M. began to stook the sheaves cut and bound yesterday forenoon, which in part had been left on the ground when the hands were driven off by increase of rain. I supposed it did not matter whether the wheat lay on the ground, in sheaves, or was in stooks, for 24 hours only after being reaped, remaining wet in both cases, and the weather being so cool. But it was found that some of the wheat on the ground had already sprouted—and the same surprising and disastrous result may now well be expected for all, without a speedy change to drying weather. Even of the standing wheat, the grains are much swollen by moisture, as if going on fast to sprout. Yet it was but in the dough state, and yesterday, if weather had permitted continuing to reap, J—— doubted whether there was enough wheat then ripe enough. As soon as the little stooking required was done, again discharged the hands,

having no work for them. At late bed-time, still slowly raining.

"Sunday, 14th. Misty, cloudy, and always damp air until noon. Afterwards some sunshine. Light scud of rain in evening, with threatening clouds and thunder. Turning warmer, found the sprouting progressing in all the stooks—and more in those of the wheat cut and sheaved wet on the 12th, and stooked on that and the following day. Would have thrown open the stooks to-day, if clear and settled weather. As it was, the risk was too great. There are numerous sprouted grains of the ripest *standing wheat!* And all the sprouting is not so alarming as the apparent condition of all the other grain of the crop; which is so swollen and softened by the continued moisture, that it seems like wheat which has soaked in water, for the purpose of making starch. And even if it should now dry soon enough to prevent further sprouting, I fear much that the gluten may be mostly converted to starch, to the great injury of the wheat for sale, and also to its power of germination. The damage is greatest in the ripest wheat. As my kind, [a forward purple-straw, red grain wheat,] is 5 to 7 days earlier in ripening than any ordinary kind (except the May and Mediterranean,) it is now just so much advanced towards injury or destruction, more than the later kinds.—Warm.

"15th. Threatening all day, but no rain. But even the expectation of rain is a serious impediment to the operations desired, under such difficulties. Began early to reap—and (for fear of more rain,) binding immediately, and putting into shocks soon after. After dew was off, opened all the shocks, turned the inner and wettest sheaves outside, in new and smaller stooks—reducing the number of sheaves in each from 8 or 9 to 4 only. The sprouting very bad—and no drying yet of the interior of the wet sheaves. The grain of the standing wheat was still very soft this morning. But the sunshine dried it fast; and before night, some grains were shattering under the stroke of the scythe. If this day had also been rainy, the crop must have been nearly or quite ruined, by the general sprouting or later rotting of the wet grains. As it is, the loss is already great.—Shocked nearly all the wheat reaped to-day. All that reaped before remaining still exposed, and wet, in the small stooks.

"16th. Warm, and generally clear—but sometimes cloudy, and one very sudden and transient shower, which fortunately did no injury. Kept to-day's reaping shocked nearly up to the scythes, except the wheat cut early in the dew, which remained in stooks.

"17th. Finding that the wheat reaped wet would not dry in stooks of no more than 4 or 5 sheaves, set up the sheaves singly. Shocked all the reaped wheat by night. The wheat cut on the 11th, when dry, has kept, and dried in the stooks, with but little sprouting or other damage; and with no other care than shifting the position of the sheaves on the 15th, and reducing the size of stooks from 8 or 9 to 4 or 5 sheaves. The wheat cut wet fared much worse; and was not entirely dry even after being to-day exposed in sheaves standing singly—though generally it is now fit for keeping in the small shocks into which it was put.—Very hot sunshine, interrupted by passing clouds. At night, light rain.

"18th. Clear until afternoon, and hot. Then, heavy cloud, with severe thunder and lightning, and violent wind. Slow rain began at 5 P. M., which stopped reaping for two hours. Afterwards, reaped about an acre, in the rain, without binding. The building of shocks kept so near the scythes, that all was done by the time the rain began to fall steadily. But the furious wind, just before, had blown off some caps and top sheaves of other shocks, and I fear has done much damage.

"19th. The violent wind of yesterday has been more injurious than was anticipated. Many stalks of corn are broken off. The standing wheat before had more or less leaning from N. E., the direction of the previous storm. The wind of yesterday was from the opposite quarter; and it has reversed and increased the leaning of all the wheat, and has broken numerous stalks, everywhere, so that the heads are too low to be saved in reaping. The caps, and even some of the roofing sheaves, of many shocks blown off, or displaced, which will require much trouble to repair.—Clear through greater part of the day. In afternoon, another heavy and alarming cloud, which, however, mostly passed by, causing only slow and light rain from before 6 P. M. to dark. The day's previous reaping all shocked; and no wheat exposed, except the shocks damaged by the wind, and not yet repaired.

"20th. In afternoon, again heavy and alarming thunder-clouds, and rain in sight, falling along an extensive line, for two hours. Fortunately, none reached here until nearly dark, and then but a light shower. Nearly all the wheat shocked up to the reaping. The waste very great, owing to the dead-ripe and dry state of the wheat, and the numerous broken and bent stalks. There is however but little shattering of the grain, owing to its being so generally shrivelled and badly filled. This defect being caused by the quantity of rain during the growth, is greater where the land is lowest and richest, and the straw most luxuriant. The very thin "stand" of the wheat also served greatly to increase this evil. [Nearly all the seed-wheat had been more or less injured by being washed in brine; and about one-fourth, or nearly, did not come up.]

"Sunday, 21st. Very cool since last evening's rain. This the first day without some rain since the beginning of harvest, and for some time before.

"22d. Still very cool. The waste in reaping increases with its causes, the dryness and broken down state of the wheat.

"23d. Strong north wind, and still very cool. Afternoon, rain falling in sight, but merely a light scud here, just before night.

"24th. The first moderately warm day, of late.

"25th. Finished reaping by night, and the building of shocks very nearly."

This crop yielded enough straw for more than 3000 bushels of grain. The actual product of wheat was 2432 bushels. The quantity of land was 201 acres. The laboring force of the farm was of 24 hands of all kinds. Such of the house-servants as could be spared (about 3) aided in the labors of harvest. The whole field force was not throughout engaged in the harvest. The shocks were 850 in number, of which about 100, put up wet, were very small.

When thrashing the crop, it did not appear that damage had occurred to any of the wheat, after its being put into shocks. This result was better than expected, from the unfavorable weather and condition of the wheat preceding the putting of some of it into shocks.

Harvest of 1848.

[The weather of the spring of 1848 had been good. No important disease or disaster had oc-

curred to my wheat crop, which appeared very good for the land. It proved indeed to be a much better product of grain than I supposed during harvest. The crops of wheat generally were better that year than in any other known.]

"June 7th. Afternoon—began to reap wheat, with 8 cradles only. The wheat is barely ripe enough [i. e. in the "dough state"] anywhere; and yet it is so generally near to that state, that I fear most of the crop will be dead-ripe, and wasting, before my small force can half get through the harvest. Strong north wind—and still continues very cool.—Reaping equal to work of 1½ days of one man.

"8th. From 3 to 6 reapers, at different times, [4½ days' work?] Before night, brought the binding up to the reaping. Sheaves shocked up to wheat cut down 8 hours preceding the latest reaping. 41 shocks. Wind northerly. This morning, the air seemed cold enough for frost—but none visible. Earth now very dry. Clouds threatening rain—but again clear before night.

"9th. Work of 7½ reapers. Day hot, but again cool at night. 40 shocks built. This work now a little more than a day behind the reaping.

"10th. Hazy and cloudy. At 10.30 A. M. slow drizzle began. Suspended reaping—and continued putting up shocks until 12 M., and also bound the wheat reaped and left unbound while wet with dew. Both operations hazardous. After a cessation of 3 hours (during which the weather continued cloudy and damp, but not rainy,) returned to wheat, and shocked all remaining, and which was still quite damp. 174 shocks, mostly small. Those put up before the beginning of the rain were of good size, and some of them larger than usual.*—[8 reapers. 5 days' work of reaping?]

"Sunday, 11th. Threatening clouds, but no rain.

"12th. 8 reapers. The building of shocks within 2½ hours of the reaping—and desired to be as near as possible. 98 shocks, of large size. Windy, cool and clear.

"13th. Very cool morning, and strong north wind all day. The wheat has ripened rapidly.—Though still green in low spots, much the greater proportion is quite ripe, and the straw dry. The heads are beginning to turn downwards. Yet but little more than one-fourth of the wheat land has been reaped. The work gets on slowly. The harvest will be long on hand, even with good weather; and a storm, or a spell of rainy weather will cause great loss.—8½ reapers. 110 shocks put up—and within an hour's work of the reaping.

"14th. Strong N. W. wind impeded the reaping, and required the moving to more sheltered ground. 7½ reapers. 95 shocks.

"15th. Wind S. W. Very warm. 8 reapers—but two of them young beginners, in place of two good scythemen who are sick to-day. Wheat now dead-ripe—and where longest ripe, the heads bent downward. Began to reap the rankest growth, of which very little is lodged, owing to the very favorable weather. 83 shocks.

"16th. 8 reapers. Clear still, and very warm. Straw now so dry and brittle as to be an impediment to tying the bands. Shattering of grain today for first time. 53 shocks. The first hot night, (or indeed otherwise than cool,) this summer.

"17th. Strong S. W. wind. Clouds threatening rain. Have now finished reaping nearly all the wheat or clover-fallow, which includes nearly all of the heavy growth. About half of the land in wheat now reaped. So far, all well secured, but all still to reap is in great peril. 96 shocks. [8 reapers?]

"Sunday, 18th. Heavy shower. Loose tilled land wet about 2 inches deep. This refreshing to the growing crops, and I hope of not much damage to the wheat. But in its present state, every wetting must do some harm.

"19th. Strong southerly wind, impeding the reaping. Four several scuds of rain—which did not stop any of the work, though perhaps the shocking of the damp sheaves may be hazardous. 70 shocks—nearly up to the reaping. 9 reapers. Cool at night.

"20th. Nine reapers. 96 shocks. Last night, another hasty shower, which did not prevent binding and shocking this morning. Reaping lightest wheat every morning as long as there remains any effect of dew or dampness on the straw. Afterwards, the reaping moved to thick wheat. Very hot.

"21st. 9½ reapers. 79 shocks.

"22d. The first calm day for some time—and oppressively hot, even when clouds obscured the sun, as was the case for most of the day. 9 reapers. 77 shocks.

"23d. High S. wind. Reaping had to be moved to more sheltered ground. 10 reapers. 63 shocks. Rain threatening. So many heads of wheat now are turned downward, and the straw is so rigid and brittle, that the binding is difficult, and badly done. The topping of the shocks also made bad, by the out-spread heads of the wheat in every sheaf, and the rigidness of the straw.

"24th. 8½ reapers. 73 shocks. North wind—and at night quite cool.

"Monday, 26th. Finished reaping at 1.30 P. M. 6 reapers to that time. [4 days work.] 37 shocks.

This has been the longest harvest I have ever gone through, but with the best weather ever known throughout harvest. If a heavy rain had occurred, the loss of wheat, from the delay of reaping, would have been very great."

When thrashing, all the small shocks put up moist with rain, on the 10th, were found dry, and the wheat in good order. Some other and larger shocks, put up greener, and in dry weather, were mouldy in the middle—though there was no loss of grain.

The crop grew on 256 acres (as estimated) and made 5127 bushels. The shocks, 1289, averaged very nearly 4 bushels. The days' work of reaping are estimated at 125½—and the average quantity of land for each was 2.04 acres; and of grain, 40.8 bushels. The farm hands, of all kinds, were 26, to which were added 5 house servants—very nearly that whole force being engaged all the time in harvest labors.

*None of this wheat, shocked after drizzle, and when damp, or but partially drying afterwards, was found damaged, at thrashing time.

HARVEST TABLE FOR MARLBOURNE FARM, 1850.

1850. June.	Full days' work of scythemen, estimated	No. of reapers for any part of the day.	WEATHER.	Dew.	WIND.	WHAT WHEAT.	No. of shocks built.	No. of shocks of this day's reaping (built later)
19	7	7	Clear and hot	None	S. W. moderate	Clover fallow—thin growth. Green	0	81
20	7 3/4	9	Clear—very hot	None	W. and S. strong —Calm	Same—good to heavy.	90	81
21	7	8	Cloudy—sultry. Light rain at daybreak, and heavy shower at 6.15 P. M.	Heavy	Shifting—N. to S. and E. and S.	Same	131	153
22	5 1/4	10	Heavy rain at 2.30.—Cleared	Heavy	Calm.—Strong S.	Same—mostly thin—part heavy	42	
23	Sunday		Clear—hot				—	—
24	8 1/2	9	Clear—not hot	Light	N. moderate	Same—mostly heavy—part thin	117	88
25	7	8	Sky overcast, with intervals of hot sunshine	Heavy	Calm.—Gentle N.	Corn land, low ground. Rank	91	83
26	8 1/2	9	Overcast	Light	Calm	Same—mostly rank—part light	82	77
27	8 1/2	9	Cloudy and threatening—at and after dark, heavy rain	Light	S. strong	Pea-fallow—rank straw, but light in grain	70	63
28	9 1/4	10	Overcast, generally	Light	S. W. Very strong	Clover fallow, mostly good, some heavy	41	71
29	8 1/2	9	Same	None	S. W. Strong	Same	90	60
30	Sunday		Clear. Very hot		Calm		—	—
July 1	8 3/4	9	Clear. Very hot	Mod'ate	Gentle—S.	Same, mostly light—afterwards pea-fallow	44	69
2	7	9	Clear forenoon, very hot, and heavy hasty rain from 2 to 3 P. M.	Light	Calm—with the rain N. and very strong	Pea-fallow—rank straw, light grain	41	
3	11	13	Clear, and very hot	Heavy	Gentle—S.	Same	96	
4	10 1/2	13	Clear and very hot	Light	Nearly calm	Same	84	
5	3 3/4	4	Clear and very hot	Light	Nearly calm	Corn field wheat—very thin	79	
6	0						22	
	118 3/4						1120	

Remarks.—June 19th. Grain barely in dough state. Straw very green. All bound.

June 20th. First shock-building—mostly of yesterday's reaping and binding. Work stopped by rain at 6.15 P. M. About 3 acres of wheat cut and in sheaves, not in shocks. June 21st. No binding until 7 A. M. June 22d. Reaping stopped by rain—and all other work except to bind and stook the wheat caught by rain, some loose, but mostly bound.

June 24th. Wheat generally ripe. Not much grain yet hard.

June 25th. Not binding early, but began before wheat was near dry.

June 28th. Wheat wet, from rain of last night; but binding early. Wheat dead ripe, and grain hard. July 1st. Binding early.

July 2d. Binding early, though very wet wheat.

July 3d. 3 reapers and 7 inferior hands hired. Wheat caught in sheaves by rain yesterday, dry by 10 A. M. to-day.

July 4th. 2 reapers and 3 other hirelings only; the others before discharged—and all at night.

Whole quantity of land (by estimate) 238 acres; number of days' work of reaping, 118¾, each averaging 2 acres, and a very small fraction. Whole number of hands of my own, of every description, 26; and the hirelings stated above for 3d and 4th of July only.

The whole crop, sold in market or saved for seed, amounted to 4595 bushels. Average product per acre 19.30 bushels. Average product to the bushel of seed, (225 sown,) 20.42 bush. Average number of bushels reaped each day, to the scythe 38.69 bush.

WORK FOR THE MONTH.

Enjoining upon every owner and occupant of a farm, to consider his personal superintendence as indispensable to success—that his presence among his hands, is more than equal to the labor of any two, either owned or employed by him, we would conjure him by every consideration that centres in humanity and interest, to enforce his commands in a kindly spirit—to let his tasks be within the compass of moderation, such as the physical powers of man can endure without absolute prostration; and thus, having graduated them upon a just measure of human ability, to insist upon their performance. With this injunction we proceed to details.

Harvesting—time of Cutting Grain.—As our Southern readers will have done their harvesting before our journal visits them again, we seize the present moment to make a few advisory remarks.

In the first place, your *force* should be ample to cut, bind, and secure, your crop; better, much better, to have a superabundance than to have too few hands. It is wise and true economy, upon such occasions, to be full handed, as well to get the grain down in good season, as to be able to protect it against the contingencies of weather.

Provide yourselves, timely, with a full supply of the best implements, and be sure that they are all in good order. This can only be effected by personal examination, and the most vigilant attention.

In providing your harvest stores, let them be good, and plenty, so that the harvesters may suffer for nothing required to sustain their muscular energies under the peculiarly trying nature of their labors in the field. Working, as they do, under the influence of the almost consuming rays of the sun, their physical powers are most heavily taxed, and unless they be sustained by refreshments between meals, it matters not how willing their hearts may be—it matters not what the degree of ambition by which they may be animated—all will have to yield to the extra calls made upon their strength, unless *extra* means be taken to sustain their sinking natures. Besides, these kind attentions to their wants, act with moral power and effect, in nerving them for the struggle; and will, when backed by kindly words from a master, or employer, go far to counteract the enervating effects of heat, and the toil encountered under its prostrating power. Interest and humanity then, both conspire to point to the policy of allowing generous fare, and of using mildness of phrase, upon these interesting occasions—both go to demonstrate that money cannot be better laid out than in providing not only the *necessaries*, but the *comforts* of the inward man—and go also, to prove, that money, thus expended, besides its physical influence, will exert a moral one—infuse that spirit of pride and gratitude among the sons of toil, which challenges the heart to do its best, and the arms, the muscles, the nerves, and the hands, to strive on in their efforts, in order that, when the sun sinks beneath the western horizon, they may, with the lips of truth, exclaim—"a faithful day's work hath been done." To ensure this, the master must give his personal attendance; his presence will serve to ensure the requisite attention to the necessities of the hands, ensure order, faithfulness, and fidelity, from them; and in every way, promote his interest. *Lunches* must be well timed; full time allowed for dinner, and unceasing vigilance observed, in keeping the men repeatedly furnished with cool drinks of *molasses, water and ginger.* A half gallon of molasses, 5 gallons of water and ¼ lb. of good strong ginger, will make a pleasant and safe beverage. The molasses, water, and ginger, to be well stirred. This drink is palatable, refreshing, and invigorating; may be drank in safety, and should be preferred to cold water alone, which not unfrequently causes death.

Having attended to your interests in regard to the management of the harvest field, we would say a few words as to the TIME OF CUTTING YOUR GRAIN. *Don't delay this until the grain is either ripe, or dead ripe*; but cut it at least 7 or 10 days before it is either the one or the other: a very good general rule as to the time of cutting, may be this: Cut when the straw immediately beneath the head has turned yellow, and become arid one or two inches in length. From that moment the root supply of nourishment is cut off from the head. And so far as the roots are concerned, their offices cease from this juncture. Grain cut at this period of its growth, is plumper, thinner skinned, more nutritive, makes better and more flour, and weighs heavier, than when permitted to get dead ripe; so that by cutting early, you will make more, and a better article; while 2 lbs. of the straw, thus cut, is worth 3 lbs. that may be left to bleach and become dry in the ground. There is another reason in favor of cutting before the grain is ripe, or dead ripe; when so cut, it is not liable to shatter, and much of the grain is saved, that would otherwise be lost. There is still another and more potent reason, which most emphatically calls for the practice of early cutting. The RUST, that fell destroyer of the wheat crop, generally makes its appearance just before the grain ripens; when, if it were cut some seven, or ten days in advance of the usual time of cutting, this danger, and consequent loss, would be avoided. *Again*—more time would be allowed for harvesting, a consideration of much importance.

The best and most enlightened farmers of England have for more than half a century been in the habit of cutting wheat before the period of its being ripe. In Dr. Rigby's Report we find the following:

"Mr. *Coke*, (of Holkham) cuts down his wheat very early, even when the ear and stem are greenish, and the grain not hard. He says, that the wheat, thus early reaped, is always his best sample, and he gets 2 s. a quarter for it more than for wheat cut in a more mature state."

"As an experienced farmer, the late Mr. *John Shirriff*, recommended, that all sorts of grain should be cut, whenever the straw immediately below the ears is so dry, that on twisting it, no juice can be expressed; for then the grain cannot improve, as the circulation of the juices to the ear is stopped. It matters not that the stalk below is green. Every hour that the grain stands uncut, after passing this stage, is attended with loss."

Professor *Norton*, who justly ranks among the ablest agricultural chemists, holds these views. He says:

"The time of cutting grain very sensibly affects the proportion of fine flour and bran yielded by samples of it. Careful experiments have shown, with regard to *wheat*, that when cut from 10 to 14 days before it is fully ripe, the grain not only weighs heavier, but measures more: it is positively better in quality, producing a larger proportion of fine flour to the bushel. When the grain is in the milk, there is but little woody fibre; nearly every thing is starch, gluten, sugar, etc., with a large per centage of water. If cut 10 or 12 days before full ripeness, the proportion of woody fibre is still small;

but as the grain ripens, the thickness of the skin rapidly increases, woody fibre being formed at the expense of the starch and sugar; these must obviously diminish in a corresponding degree, the quality of the grain being of course injured. The same thing is true as to all of the other grains."

After recommending the *early* cutting of grasses intended for hay, professor James F. W. Johnston, adds:

"The same remarks apply to crops of corn,—[wheat, rye, oats, and barley] both to the straw and to the grain they yield. The rawer the crop is cut, the heavier and more nourishing the straw. Within three weeks of being fully ripe, the straw begins to diminish in weight, and the longer it remains uncut after that time, the lighter it becomes and the less nourishing.

On the other hand, the ear which is sweet and milky a month before it is ripe, gradually consolidates, the sugar changing into starch, and the milk thickening into gluten and the albumen of the flour. As soon as this change is nearly completed, or about a fortnight before ripening, the grain contains the largest proportion of starch and gluten; if reaped at this time, the bushel will be heavier, and will yield the largest quantity of fine flour and the least bran.

At this period the grain has a thin skin, and hence the small quantity of bran. But if the crop be still left uncut, the next natural step in the ripening process is, to cover the grain with a better protection, a thicker skin. A portion of the starch of the grain is changed into woody fibre,—precisely as in the ripening of hay, of the soft shoots of the dog-rose, and of the roots of the common radish. By this change, therefore, the quantity of starch is lessened, and the weight of husk increased; hence the diminished yield of flour, and the increased produce of bran.

Theory and experience, therefore, indicate about a fortnight before full ripening as the most proper time for cutting. The skin is then thinner, the grain fuller, the bushel heavier, the yield of flour greater, the quantity of bran less; while at the same time, the straw is heavier, and contains more soluble matter than when it is left uncut until it is considered to be fully ripe."

We have thus far dwelt upon the theory of the matter, and given such reasons deduced therefrom as should, we think, satisfy any discriminating judgment as to the propriety of cutting wheat and other small grains early—at least several days before they are ripe—and we now propose to give the more reliable tests—the results of practical experience. Against these there can be no gainsaining, as they accord with the theory—are in close keeping with the principles upon which that theory is constructed, and demonstrate with the force of truth and reason, that it requires nothing but practice to prove that it was founded upon an intimate acquaintance with the laws which regulate vegetable economy.

We shall now give a very brief abstract of an elaborate article from the pen of that enlightened British farmer, Mr. *John Hannam*, which appeared in the *Quarterly Journal of Agriculture* in June 1841.

To ascertain the proper time for cutting wheat, Mr. Hannam cut one part on the 4th of August, in a raw state, and the third part on the 1st of September, when *ripe*. The following were the results. He placed the samples in the hands of an extensive corn-factor and ascertained his opinion of their values, respectively. His reply was that he would give for

No. 1. cut very green, 61s. per quarter,
No. 2. cut when raw, 63s. " "
No. 3. cut when ripe, 61s. " "

The wheat cut a fortnight before it was ripe had the advantage of that cut when ripe in every point:

1st. In weight of grass produce 13½ per cent.
2d. In weight of equal measures ½ per cent.
3d. In weight of equal number of grs. 2 1-5 per cent.
4th. In quality and value 3¼ per cent.
5th. In weight of straw 5 per cent.

The conclusions to which he arrived were:—

"That there was a gain of 4 per cent by cutting 2 weeks before the wheat was ripe in the value of the grain.

That the straw is of a better quality: a better chance of securing the crop: and saving in securing it. The "saving in securing the crop" Mr. H. considers a double one. In the first place, there is less waste in mowing or reaping, and no danger of shaking. In the next place, there is an absolute economy in the expense of reaping the crop, as the farmer by beginning early, can do a much larger portion of his harvest work with his own hands, and is "rendered less dependent upon extraneous help."

"The *raw* cut wheat gave 6 1-4 lbs. of flour to the bushel more than *ripe* gave, while the latter gave 3⅛ lbs. more sharps, and 1 1-8 lb. more bran than the former per bushel."

Mr. Hannam made another experiment, 5 different periods of cutting, viz:

No. 1. was cut a month before fully ripe.
No. 2. " " 3 weeks " " "
No. 3. " " 2 weeks " " "
No. 4. " " 2 days before fully ripe.
No. 5. " " when ripe.

Taking 100 lbs. of the grain, he found it to yield flour as follows:—

No.	Flour	Seconds	Bran
1.	75 lbs.	7 lbs.	17 lbs.
2.	76 "	7 "	16 "
3.	80 "	5 "	13 "
4.	77 "	7 "	14 "
5.	72 "	11 "	15 "

"It thus appears," says Mr. Hannam, "that No. 3 (cut 2 weeks before it was fully ripe) is superior to all other varieties; giving more per bushel than No. 5 (cut when fully ripe) by 6½ lbs. of flour, and a gain of about 15 per cent. on the flour of equal measure of grain. 100 lbs. of wheat of No. 3 makes 80 lbs. of flour; while 100 lbs. of No. 5 yields 72 lbs. showing an average of 8 per cent. in *favor of grain cut raw*. In grinding, it was found that No. 5 ground the worst—worse than No. 1. In No. 5 were a greater quantity of flinty particles, which would not pass the bolt, than in any of the others. The bran from No. 5 was coarse and heavy; while that from No. 3 was thin as a bee's wing."

He thus sums up the advantages: "A gain of 15 per cent. of flour upon equal measures: a gain in the weight of straw of 14 per cent.;" while "the flour produced by No. 3 was of a far better quality than that produced from the grain cut at any other time."

We have brought the subject of the propriety of cutting wheat several days before it is ripe, thus fully before our readers, on the eve of harvest, because we are a believer in the doctrine, and as conscientiously believe, that, if wheat growers had taken our advice last year, and cut their wheat from

7 to 10 days before it was ripe, they would have saved thousands and tens of thousands of bushels that perished by the rust, owing to its being left in the field, uncut, to ripen; for all the mischief was done within a few days of harvest—all of which might have been prevented in the way indicated by our advice.

Cultivating Corn.—Keep the *Cultivator* and *hoe-men* going in your corn-field, so as to entirely keep down the weeds and grass, and the soil open, until the corn plants get into silk. Particularly should you be careful to keep them going in times of drought, as it is then that it most needs the moisture and the nutriment they contain; and if we are to believe in the science of chemistry—and we should, —the dews contain much to nourish the plants.—While we advocate frequent stirring with the Cultivator and hoe, we are diametrically opposed to the use of the plough, for two substantial reasons—first, that it cuts off and bruises the roots, and thus deprives the plants of the means of feeding—and, secondly, because, by turning up the manure to be leached and deprived of its nutrimental constituents, the food of the plants are wasted, and to these causes may be ascribed the existence of so many barren and grainless ears of corn in a field. The *grain* did not form, because, in the first place, the plants had been deprived of their feeders; and secondly, because the food had been wasted by the manure having been ploughed up and the virtues exhaled. So, also, to the same causes may we, in a great measure, ascribe the "burning" up of the blades; they become withered and blighted, for want of moisture and nutriment to sustain them.

Beets.—The Mangel Wurtzel and the Sugar Beet, may still be put in up to the 7th or 10th of this month. The crops will not be so great as they would have been had they been put in a month or six weeks earlier; but still, with careful culture, may yet make a fair crop, and the milch cows, in the increased product of milk, cream, and butter, convince you how much your interest is concerned, in proper attention to the root culture.

Carrots, also, may be drilled in, if done the first week of this month. These roots are among the best food for milch cows, make an excellent alterative food for horses, and are well relished by all kinds of stock.

Potatoes.—Though it is late for potatoes—very late in view of the chances of the rot—they may still be put in up to the 10th of the month, with a fair prospect of yielding a moderate crop, should they not be visited by the rot.

Broadcast Corn.—To ensure a supply of green food for your milch cows against the time when your pastures fail, put in an acre of broadcast corn. The ground must be heavily manured, thoroughly, and deeply, ploughed, and as thoroughly harrowed; then sow, broadcast, 3 bushels of corn thereon, harrow it in, and roll the ground.

Millet.—If your crop of hay is a short one, prepare a few acres and sow them in Millet. For the manner of manuring, ploughing and preparing the ground, the mode of curing the hay, &c., we refer you to our directions of last month.

Clover Hay.—Clover, for hay, should always be cut when it first comes into bloom. When cut, it should be permitted to remain in the swarth 4 or 5 hours, then be put into cocks of about 50 lbs. each; the next morning, after the dew is exhaled, the cocks should be gently turned over, and as soon as the moisture is evaporated, put four or five cocks together, make them up smooth, to turn rain; the next day, if no rain shall have occurred, the clover may be stowed away, and will be the better of having a peck of salt to the ton strewn over it as it is being packed away. Clover cut thus early, and thus cured, makes much the best hay, does not lose its leaves, and is green and fragrant. Besides which, the after math is much more luxuriant, and less injury sustained by the soil.

Winter Turnips.—It is too soon to put these in; but full time for you to be procuring manure for them: full time to begin the preparation of the ground, which will be all the better of having two or three ploughings, at intervals, between this and the 25th of July, about which time, you should sow them. For an acre of turnips, you should at least have 20 loads of well rotted or compost manure, 20 bushels of ashes, and 1 bushel of plaster, the two latter to be broadcasted at the time of sowing the turnips; the first to be ploughed in at the last ploughing.

Ten bushels of bone-dust, 10 bushels of ashes, and 5 gallons of oil, mixed, and left in heap a few days, will manure an acre of turnips: so, also, will 300 or 400 lbs. of Guano, and a bushel of plaster, mixed together, and ploughed in: so would 20 loads of marsh mud, 10 bushels of ashes, 5 bushels of bones, and 1 bushel of plaster, if mixed together and left in the heap for 5 or 6 weeks: so also would 15 loads of marsh or river mud, made into compost with 5 loads of stable or barn-yard manure, and 10 bushels of ashes, incorporated therewith. Plenty of manure, and thorough preparation of the soil, are necessary in the growth of a good crop of turnips.

Buckwheat.—Any time this month, and up to the 10th of July, a crop of buckwheat may be seeded, the sooner after the middle of this month the better. It is a sure crop, even on a poor soil, with the aid of a little manure,—in a tolerably fair soil, a very large crop may be calculated upon, the same means being used to enliven the soil.

Of the manure.—Ten loads of barn-yard manure; 10 loads of any good compost; 10 bushels of bone-dust, and 10 bushels of ashes; or 200 lbs. of Guano, mixed with plaster, will ensure a good crop. The bone-dust and ashes, to be harrowed in with the seed, the other manures to be ploughed in.

Buckwheat, as it derives a large portion of its food from the air up to the time of forming the grain, is not a very exhausting crop. It makes most delicious cakes, as every good housewife knows, and should grace the farmer's breakfast table throughout winter; chopt and mixed with cut straw, or hay, it is excellent as an alterative food for horses; made into slop for milch cows, it makes the milk flow; hogs, occasionally slopt with it, thrive well; it makes good food for chickens, particularly at moulting time —all poultry relish it. Its straw, cured into hay, is good long forage for cattle.

Quantity of Seed per acre.—Sow from 2 to 3 pecks of seed per acre.

Time of Cutting.—As it is liable to shatter, buckwheat should be cut when about one-half the grains on the head are ripe, which will be known by their turning black. Cure, as you would any other grain, and thresh out soon after the straw is dry.

Beans.—If you have a flock of sheep, whose fleeces you desire to make the most of, prepare an acre or so of ground, and drill in beans, than which, when ground into flour, and fed to sheep, there is nothing

you can give them so promotive of the growth of wool, or better adapted, from their highly nutritive properties, to elaborate flesh: a gill or a gill and a half, a day, together with two and a half pounds of hay, or fodder, will keep a sheep in fine condition.

Soil.—Clay mould is best adapted to beans, though they will grow in any good, tolerably moist soil.

Manure.—Ten loads of putrescent manure will be enough for an acre.

Preparation of the Ground.—Plough deep, harrow thoroughly, roll, and make drills 2½ inches deep, 18 inches apart, running north and south, drill or drop the beans in 3 inches apart, and cover.

Culture.—Keep them clean of weeds, and the earth well stirred, until they begin to pod, taking care to moderately hill them.

Kinds to Sow.—The Large White Kidney, and the Early China are productive sorts, and well adapted to field culture; so, also, is the *Black Spanish*, *Mexican*, or *Brazilian* (for it goes by each of these names;) the latter is not only productive, but the richest of all the Bean family, and makes the most delicious soup of any other sort.

The Straw, if well cured, is good forage for sheep. In England, it is used for stock generally—here we most generally waste it.

Wet Lands.—To render wet arable lands fully productive, they should be drained; their powers of production are not only greatly increased, but the quality of the crops vastly improved thereby—and we need not tell the intelligent planter or farmer, that the health of his place, will also be improved, and his family relieved from autumnal fevers. *Marshes*, where they admit of it, should also be ditched and drained.

RUTA BAGA.—For stock feeding, this root stands deservedly high, is productive, and more nutritive than any other turnip; for *spring use*, it is a very good table vegetable, and should, we think, enter into very general culture; the more so, as it is hardy, easily kept, and retains its edible qualities until a very late period of the spring,—long after other turnips cease to be fit for table use. For cattle and sheep, it is equal to almost any root grown, good to be occasionally fed to horses, and as the Ruta-baga yields well, when grown as it ought to be, a very few acres, or even one, would add greatly to the feeding resources of the farmer.

Time of Sowing.—When raised for stock exclusively, early sowing is desirable, as that secures large roots, and, of course an increase of quantity. When, therefore, intended for such use, they should be gotten in between the 15th and 25th of June: if wanted for table use, the seeding may be delayed until the 15th of July; it would, however, even for such purpose, be best to get them in the first week of the latter month.

Modes of Culture.—They may be either grown broadcast, or in drills; the latter mode decidedly best—thus grown, they are easier and more cheaply worked, and yield more; both considerations to be esteemed by an economical farmer.

Soil.—Like other turnips, they delight most in deep, light sandy moulds; new grounds, grass-swards or clover-leys, suiting them best.

Preparation of the Soil.—We go, as our readers must be pretty well aware, for thoroughness in all preparations of the ground, but in this crop, it is absolutely necessary. Where it is practicable, the land should be ploughed two or three times, and ploughed deeply, say 6 or 10 inches in depth, accompanied by repeated harrowing and rolling, each time, so as to reduce the soil to the finest possible tilth. If but one ploughing can be given, *that* must be executed with the utmost nicety and exactness, of the depth named; and, if possible, be sub-soiled at the same time; the tilth to be reduced to the utmost fineness, by harrowing, cross-harrowing, and rolling.

If intended to be grown broadcast, the manure must be evenly spread and ploughed in,—when thus grown, they will require one-third more manure.—When raised in drills, as they ought to be, the manure to be spread evenly in the drills, as hereinafter directed.

Kinds and quantities of Manure.—For broadcasting, it will take 15 or 20 double horse cart loads of well rotted manure, in which there should be 1 part out of 8 of ashes. If Guano be used, 400 lbs. and 1 bushel of plaster, mixed together, will be required—if Guano and bones be used, 300 lbs. of the former, and 4 bushels of the latter, to be mixed with 1 bushel of plaster.

If grown in Drills, ⅔ of the above quantities will answer—if in this method, 20 bushels of bone-dust, 20 bushels of ashes, and 5 gallons of fish oil, would make an admirable compost for an acre. This latter compost would not only grow a large crop of turnips, but leave the ground in excellent heart for future culture:—the ground, of course, to be cross-ploughed for the succeeding crop, to ensure the better distribution of the manure.

Quantity of seed per acre:—if sown *broadcast*, from 1½ to 2 lbs.,—if in drills, 1 lb. will be enough.

Preparation of the ground for drilling.—The ground being prepared, by ploughing, harrowing, and rolling, as before directed, run furrows north and south, from 20 to 24 inches apart, 4 inches deep; into these furrows distribute your manure equally; the manure in, cover with a plough, run a harrow over the furrows. If you have a drilling machine—which you should have—drill the seed in on the top of the furrows, and your work will be done, as the machine will make the drill drop the seed, cover, and roll them in, by the same operation.

If you have no drilling machine—stretch a line along the centre of the furrow, and with a marking rake, or the corner of a hoe, trace a drill 1 inch deep, drop the seed from the mouth of a quart bottle or tin seeding horn—the bottle, or horn, must have in it equal quantities of seed and sand, and be kept constantly on the shake as the sower proceeds; he must be followed by a hand with a rake, to rake the seed in, and press the soil down on them with the back part of it.

Preparation of the Seed.—Soak the seed from 12 to 24 hours in fish oil, previous to sowing them; the seed must have the oil strained off, and then be mixed with slaked lime, plaster, ashes or soot, to separate and render them easy to be sown: they should, preparatory to being sown, be mixed with an equal quantity of dry sand, to ensure a thin drilling, or sowing, as the case may be.

After Cultivation.—As soon as the plants come up, for several mornings in succession, while the dew is on them, they must be dusted over with ashes, lime, plaster, or ashes and soot: or what we consider better, be sprinkled over with fish oil of some kind; this latter operation can be very readily performed by carrying a piggin of oil in one hand, and a mop in the other; so that a hand can distribute the oil as fast as he can walk. It would be better, however,

for the owner to do this, himself, as the safety of his crop may depend upon the faithfulness with which it is done, the object being to protect them from the fly.

When the plants are large enough, run a narrow Cultivator through the middle of the rows, leaving the line of plants undisturbed; they must be worked by hand and hoe, at the same time.

At an interval of a week, give the plants a second working, thin them out, so as to stand 8 inches apart in the rows. Should there be any naked spots where the seed or plants may have failed or perished, draw plants carefully from where they may be too thick, and dibble them in, so as to fill up the vacant places: for this transplanting, a wet season must be selected. At the time of the second working, sow a bushel of equal parts of ashes, plaster, and salt, over the drills of plants. If your manure may have had no ashes in it—you should, at the first, or at this working, broadcast 10 bushels of ashes over each acre. Give the plants a third working in ten days from the time of the second one—and your labor of culture will be at an end.

Ruta-baga, broadcasted, must be thinned out, to stand 12 inches apart—the earth must be frequently stirred, and kept entirely free from weeds and grass, and the first working could be most effectually done with the harrow.

Poultry Houses and Poultry.—Clean out your poultry houses weekly, and save the mannre, as it is good, and will go as far as guano, if properly saved and taken care of. Each weekly collection, should be put into a barrel, strewed over with plaster, or pulverized charcoal, covered from air, and kept in dry places.

If your fowls have not access to a running stream of good water, provide them with fresh water thrice a day. In cold, wet, or damp weather, have the young broods protected by shelter; and see, upon such occasions, that they get shallots, chives, or leeks finely chopt up, and mixed with their food.

Manure.—Pay incrersed attention to the accumulation of materials for making manure—manure makes mould, mould makes crops, and crops make farmers comfortable and happy. Mould is the life-blood of soil—without it, or something identical in substance, no soil can be productive. The air alone, never made a crop yet, and never will—neither has clay and sand alone, nor will they while water runs down hill.

Meadows.—If these need it—after your grass crop is off, renovate your meadows, as we have before advised.

If you have no meadow, prepare to form one in August, that being the best month in the year to set a meadow—if you should want your hay exclusively for the use of your own stock, we would advise a mixture of several kinds of grasses, as timothy, Kentucky Blue grass, Orchard grass, Red top, Sweet scented Vernal grass, and Rye grass. Such a mixture would give more hay, and infinitely better after math pasturage, than timothy, or any other single grass.

Fences.—Examine and repair your fences.

Gates and bars.—Wherever you have a set of bars, place a gate.

Weeds.—Make war to the knife against the whole tribe.

Bushes, briars, brambles.—Cut these up and burn them—they have too long been tolerated on your farm—their vigor marks the slovenly farmer—their destruction the notable one.

Implements and tools.—Weekly examinations of these, by the master, are commendable—nay absolutely necessary—such as require repairing should be promptly repaired.

Orchards.—As fruit falls in the orchard, have them gathered, and cooked in slops for your pigs or cows. Attend to small matters, and they will grow big after a while.

Old Fields.—If you have one of these eye-sores on your farm, plough it up, spread on it 25 bushels of lime, 50 bushels of marl, or 50 bushels of ashes, sow it with buckwheat, harrow it in and roll; when in bloom, plough the buckwheat under, harrow, sow buckwheat again, and roll; when in bloom, plough it under and harrow, then sow 5 bushels of bone-dust, 10 bushels of ashes, 2 bushels of salt, and one bushel of plaster; harrow the whole in, and you may seed to wheat, or rye, just as you please—or you may set it in grass.

Old fields are not only heavy expense for taxes, but, for interest on their cost value upon farmers, are unsightly in appearance, and operate to prejudice the public against their owners; but fortunately, they can, with a very little expenditure, of labor and money, be made to be sources of revenue.

☞ The land owner, who sets the example of improving old fields, should be looked upon as a benefactor to his kind. ☜

We have recommended *buckwheat*, because of the lateness of the season; if it were earlier, we should prefer the second crop to be peas, and we would not care whether the variety sown was "Cow Pea," "Shinney Pea," "Black Eye," "Marlborough," "Horn-grey," "Blue Poplar," or "Dutch Admiral"—a pea is a pea, let it be called by whatsoever name it may—our object is, to get the material for forming mould into the soil, as without it, the earth cannot perform the service which God intended it should.

WORK IN THE GARDEN.

Every department of the garden requires to be closely looked to this month, but as the presiding geniuses of such appendages to the homestead, require no other stimulus to action than is to be found in their own generous natures, we shall content ourself with simply calling to their notice such things as require attention.

Melons—Cantaleupes.—These, if not already thinned out, should be, without farther delay—leave 3 or 4 vines in a hill, clean off weeds and grass, and draw the earth around the stems with the hoe, as far up as the seed leaves. The ground should at all times be kept stirred, so as to open its pores, in order that it may be prepared to absorb the dews, come when they may. Cleanliness in the culture of these delicious fruits are conducive to vigorous growth and prolific bearing. In dry weather they should be freely watered, and occasional watering with a decoction of soot and water, made in the proportion of 1 quart of the former, to 10 gallons of the latter, will be found eminently beneficial.

Bunch Beans.—Keep the early crop free from weeds and grass, and water them in dry weather. Plant, in the beginning of the month, a main crop, both to use green, and for use in soups. If when you plant the weather should be dry, give to your drills a free watering, and continue to do so until they come up, it being necessary that moisture be maintained in the ground, to encourage germination. While you may be drilling in your beans, don't omit to put in some rows of the Black Mexican, Brazil-

lian, or Spanish,—for we hazard nothing in saying, that, for soup, it is the most delicious of any thing that bears the name of bean:—with a little care in the preparation, a soup may be made of this variety, that would pass muster with many for turtle soup—aye, the real green turtle soup—who take pride in being considered epicures.

Garden Peas.—Drill in a few rows for late use—scald the peas before planting, and you may get rid of the bugs, in their product, which infest them, and be able, without distaste, to have them on your table next fall and winter. Water the drills at planting, and continue to do so until they come up, and afterwards in dry weather.

Setting out Cabbage Plants.—Avail yourself of every occasion of a rain to set out your cabbage plants of different kinds. To prevent injury from the cut worm, prepare a mixture, in some vessel, of 6 parts fine mould, 1 part soot and 1 part sulphur, bring it to the consistence of cream, with water, and as you withdraw the plants from the plant bed, immerse the roots and stem up to the leaves in the mixture. By taking this precaution, you will not only save the plants from injury from insects, but ensure them an early and vigorous start, which always exerts a favorable influence upon their subsequent growth. Should a drought intervene, the plants should be watered.

Cymblins.—These should be kept clean, and, in dry weather, be watered.

Cucumbers.—These should receive the same care; should the vines be too rank, top the leading runners.

Cauliflowers.—The plants of these that you planted out early, if producing flowers, should have the outer-leaves broken inwards to shade and protect them from the sun. In hilling them, give the hills basin-like shapes, to catch and retain the water, moisture being necessary to their perfect development.

Your late *Cauliflower* plants may now be set out. If the ground is not very wet, on being transplanted, they should receive a soaking watering; and care must be taken, by repeated waterings, to maintain the earth in a state of moisture, until the plants take root and grow freely. As a precaution against the effects of the sun, it is proper to place a cabbage leaf, or paper cap, over each plant and retain it there for several days.

Broccoli.—These should be treated in the same manner.

Cucumbers—Melons.—Towards the latter part of this month plant cucumbers and melons for pickles and mangoes.

Cabbages for early fall use.—Sow a few seed of the earliest varieties of cabbage for heading in early fall.

Celery.—Your plants that may be ready should now be set out in trenches.

Asparagus Beds.—The old as well as the newly formed beds should be kept clean of weeds.

Leeks, may be transplanted early this month.

Lettuce—Set out plants for heading, and sow seed for a later crop.

Carrots—Parsnips.—Weed your early sown beds of carrots and parsnips. Carrot seed may be drilled in for a late crop, if done the first week in this month.

Pole Beans.—Give these a thorough working. The Early Carolina bean may be planted, if done in the beginning of the month.

Beets.—If you have not thinned out your beets do so at once; give them a thorough working, and never permit either grass or weeds to rob them of their food. *Beets*, for fall and winter use, may be sown up to the 10th of the month; we mention this not because we approve of such late planting, but to apprise you, if you have not already got in your main crop, that you may still do so.

Early Turnips.—If you have a bed of these, weed them. If not, sow a square, or part of one—early turnips make a grateful dish at home, and bring good prices in market.

Salsafy.—Work your salsify bed, so that the weeds may not find an abiding place among the plants. In dry weather, water the bed.

Onions.—Should these manifest a disposition to make tops, instead of forming bulbs, bend down the tops, clean out the weeds, but don't hill the bulbs, and water freely in times of drought. A solution made of 1 qt. soot, 10 gallons of water, occasionally given to them, operates very advantageously, both in promoting the growth of the roots, and arresting the ravages of the worm.

Okra.—If not done, thin them out, give the plants a good hoeing and watering. Cleanliness is beneficial to them.

Tomatoes—Egg Plants.—Keep them clean, and let them have the advantage of the watering pot.

Red Peppers.—Set out your pepper plants, and recollect, that weeds and they do not agree together.

Borecole.—Plants of these should be set out early this month.

Radishes.—Sow radish seed, at intervals of ten days, throughout the month.

Small Sallading—Should be sown every week during the month; in order that the crop may be continuous.

Endives.—Set out the plants which may be large enough, and sow more seed for a late crop.

Late Roasting Ears.—Plant a patch of corn for late roasting ears.

Flower Borders—Flowers.—Keep a vigilant eye upon your flower borders; have them kept clean from weeds and grass, and the flowers growing on them repeatedly refreshed by copious supplies of water.

Weeds and Grass.—Every bed and border in the garden should be examined every few days, and, wherever grass and weeds make their appearance, they should be forthwith pulled or hoed up. It should be the pride of every gardener, as it certainly is his duty, to give no resting place within the garden enclosure to these enemies of cleanly culture.

Peach Trees.—Examine your peach trees a few inches beneath the ground, and wherever you find a puncture poke the point of your knife, a piece of wire, or knitting needle therein, work it about, and you'll kill the worm, fill up the hole with a mixture made of two parts of soft soap, 1 part sulphur and 1 part salt—then paint the trunk of the tree with the same as far up as the limbs; then sow broadcast under each tree half a gallon of a mixture made of 6 parts ashes, 1 part salt, and 1 part saltpetre.

THE 17 YEAR LOCUSTS, as before announced by Dr. G. B. Smith, made their appearance promptly at the time appointed, (the 18th inst.) We see it stated in several quarters, that hogs and fowls had died from eating the locusts.

FLORAL DEPARTMENT.

Prepared by John Feast, Florist, 279 Lexington st. for the American Farmer.

All greenhouse plants should be arranged in their proper places for the summer, such as are best adapted to their growth and health. If convenient, give them one with an eastern aspect, rather shady, protected from the afternoon sun; for where exposed all day, they require more water, and consequently greater changes takes place, which is death to some tribes of plants that are sometimes lost even with the best treatment, as the Ericas, Daphnes, Fuchias, Epocris, and many others; therefore the less water a plant requires, the less liable they are to die; because, the changes are not so great, which depend all on the situation. Proper *drainage* is essential in pot culture, and should be strictly adhered to, as it is impossible to keep plants in good health, if it is not given them. Some porous article, such as pieces of broken pots, brickbats, or charcoal, should be put in the bottoms of the pots or tubs, in order to conduct the water off. When plants may not have been potted thus, they should be turned out and fresh drainage given them. With the attention required, plants can be kept with little trouble.

Camellias will be best kept in the house this season, as the locusts are very destructive to them; if the branches be perforated, they are generally killed. If not kept in all the season, they should at all events be thus protected in the early part. The locust are most destructive this and next month. If greenhouse plants can be protected for a while, it will be all the better.

Hibiscus Chinensis, Erythirias, Justicias, Plumbagoes, Salvias, and many other plants, might be put in the borders for blooming through the summer. All such plants fill upwards and give a fine display of bloom.

Achemenes, Gloxinias, &c. will need larger pots.

Pelargoniums will need a plentiful supply of water while in bloom. Give plenty of air, and shade them a little from mid-day sun; they will bloom much longer and show to better perfection.

Cactuses will require plenty of water now while in flower.

Roses that have not been put out of doors should be plunged or planted out in the borders. *Budding* may be done and cuttings struck, if a fresh stock is wanted for next year.

Azaleas should be plunged in some shady place, if possible, and if the young wood is ripe enough, layering may be done and cuttings put in, as it is the best time to strike root.

Carnations and *Pinks* should be tied up neatly, to show the bloom. Make layers or cuttings as soon as they are done flowering, and plant out seedlings in the open ground if they have been raised in pots or boxes from early sowings.

Dahlias should be finished planting this month, or otherwise they will not have time to bloom. Their blooming well depends much on the fall weather, as they may be prevented by early frosts, which sometimes happen to those planted out late.

Annuals, of all kinds, should be properly thinned and planted out, if they have been raised in frames; also perennial plants, as Phloxes, &c. should be planted out; they will likely flower during the summer.

Have the borders neatly cleaned, and every thing tied up to stakes, or trellises, to prevent being injured;—keep the grass continually mowed, if you wish a neat looking Lawn—as much depends on cutting early and frequently.—To scatter a small quantity of soot gives the grass a fine dark color, and is much better than manure or any thing else that can be put on; it also tends to destroy the moss growing in the sod, and gives a healthy appearance.

POTATO CULTURE.

To the Editor of the American Farmer—

DEAR SIR:—I enclose a copy of the letter addressed to the French Consul: whether he has deemed it of sufficient importance to transmit to his government or not, I have no means of knowing, and whether it merits publication, or whether it ought to be published under the circumstances, I must leave for your judgment; I have complied with your request. Respectfully,

Your friend,

D. W. NAILL.

COTTAGE FARM, Sams Creek, Frederick Co., Md., March 22d, 1851.

M. DEVERNON, Esq.

SIR:—In the last number of the "Plough, Loom and Anvil," published at Philadelphia, I find a correspondence between yourself, at the instance of your government, and the Editor of that journal, in relation to the potato crop of the United States, and the best mode of culture; in which he has expressed his greatest confidence in the method I have adopted in their cultivation. Having never given the editor the reasons which led to the adoption of the method, I feel it due to the government of our ancient ally and friend, to impart them through you also, although yet wanting the sanctions of time to establish their soundness. In 1846 I made an effort to raise a crop earlier than usual in this locality; high, warm and dry land was selected, and by the first of July, a good crop was matured, at which time repeated and deeply soaking rains occurred, and the thermometer rose to 95° Fahrenheit, a degree of heat I had not seen indicated here before—the potatoes rotted. Two of the elements of fermentation, *heat* and *moisture,* were present in *excess*—but whether the crop was lost from that cause or not is yet uncertain.

A portion planted later did not suffer from the rot. I had ascertained in the summer of 1845, that in the summer season here, the indications of the thermometer in the open air in the shade, and the soil at the depth of ordinary cultivation, (say 6 to 8 inches) are about the same; under grass, the temperature is several degrees lower, hence came the idea of *a covering* to keep down the temperature and *probably* prevent the *rot,* and *certainly* at least obviate the destructive effects of drought almost all seasons, and thus assure a full maturity of the crop, so as to render them always a wholesome article of diet, a matter of vast importance when the extent to which they are now used as such, is taken into view. I will here add the observations made with the thermometer above alluded to, as illustrative of the influence of a covering on the temperature of the earth, the basis of the method of cultivation I am pursuing.

1845, June 12th. Just before a heavy summer shower.

Open air in the shade, -	86°
Corn field, 6 inches deep, -	85°
Potato field, 6 do do -	83°
Morning after the rain, 7 o'clock, A. M.	
Open in the shade, - -	75°
Corn field, 6 inches deep, -	75°
Potato field, 6 do do -	73°
Garden, light soil, -	70°

There has been a higher degree of heat every season since, 102° being the highest.

Should you deem this brief note of sufficient importance for transmission to your government, in addition to what has already been furnished by my friend J. S. Skinner, Esq., and if it shall in any degree subserve any useful purpose, I shall be more than compensated for the few moments spent in its preparation. I have the honor to be

Most respectfully,
Your ob't serv't.
D. W. NAILL.

M. De Vernon, Esq., French Consul at Phila.

Peruvian Guano, versus Kentish's Prepared Guano.

TESTIMONY of Dr. J. H. Bayne, of Prince George's Co. Md., a well known and intelligent agriculturist. Extract of a letter from E. B. Addison, Alexandria, Va.

"Dr. J. H. Bayne authorizes me to say, that in the spring of 1850, he planted his potatoes, side by side, as follows: on a given number of rows he used Poudrette, on a like number, African Guano, Peruvian Guano, and your Prepared Salts. The first two were distanced, but with the Peruvian and your Prepared Guano it was "*neck and neck.*" He pronounced yours, "*an excellent article and esteems it highly.*"

Norfolk, Va., 3d July. 1850.

Sir:—I have used your Prepared Guano on peas and potatoes, with great success, and I give it the preference to any manure I have ever employed. E. M. MARCHANT.

To Mr. C. A. Kentish.

I would also refer to the following, amongst hundreds of other gentlemen, as to the superiority of my Prepared Guano.

Hon. Wm. C. Bradley, Westminister, Vt.

W. O. Platt, Editor of the Vermont Phœnix, Brattleboro' Vt.

Church Miller, Brattleboro', Vt., on Corn.

Seth Perkins, near the Court-house, Fairfax Co. Va., on Corn.

POTATOE ROT.

White Plains, Westchester Co., N. Y.

I have used "Kentish's Prepared Guano" this season on potatoes. My crop was large and all sound. Where I did not use it, the potatoes were all rotten and worthless. My neighbors also, who have not used this Fertilizer, have not raised a saleable potatoe this year. I consider it a preventive of Rot! G. PREAUT.

Sept. 28, 1850.

Price, $20 per ton, for sale by CHAS. A. KENTISH,
je. 1-6t 40 Peck Slip, N. Y. City.

Peruvian Government GUANO.

WHOLESALE & RETAIL.

HAVING made arrangements with the Government Agent for a limited but certain supply of the best Peruvian Guano for Autumn sales, I am now prepared to receive orders from my friends for whatever quantity they may desire.

To avoid delay and disappointment, those who intend to use this invaluable fertilizing agent had best send in their orders at once.

The price can be fixed now or at the time of delivery, as may be preferred. JOHN ROWLETT.

Petersburg, Va. June, 1, 1851. tf

JOHN ROWLETT,

COMMISSION MERCHANT & FORWARDING AGENT,

Long Wharf, Petersburg, Va.

Commission on Sales Wheat, Corn and Oats, one cent per *Commercial Bushel.* PLANTATION SUPPLIES, *Peruvian Guano, Lime* and *Plaster*, promptly furnished farmers and planters upon as reasonable terms as any house in Virginia.

June 1, tf

Grade Devon Stock.

FOR SALE, about 15 or 20 Calves, 3-4 and 7-8 Devon, very hand-some formed, 4 to 6 weeks old, price $20 to $25. Also, a pair of Oxen, half Devon, good size, 3 years old, and pretty well broke; price $70, delivered on board the steamboat Cecil, in Cecil Co., at the risk and expense of purchaser. Also, some South Down Lambs, for breeders, price $5, deliverable as above. Apply to

W. L. BATEMAN,
61 Calvert street, Baltimore,
Or at the farm of S. G. Fisher, Mt. Harmon, Cecil Co., Md.

GATCHEL'S Patent WATER RAMS.

FOR SALE at E. Whitman, Jr. & Co's Agricultural Establishment, No. 55 Light street. J. Hewes & Co., corner Pratt and Frederick sts., Baltimore, Md. These machines are cheap and durable; will elevate a constant stream of pure water any height or distance required, *without labor.* Any amount of references can be given as to their reputation, simplicity, durability, &c.

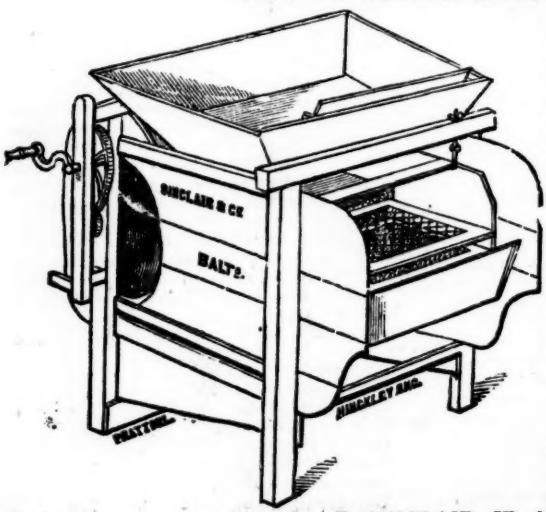
The patentee is prepared to furnish all sizes of machines, with Lead, Cast and Wrought Iron, Glass or Cement Pipes, and to erect the same with neatness and despatch, in any part of the United States. All work warranted, or no charge. Address, describing location, &c.

J. L. GATCHEL, Elkton, Md.

☞ I refer, by permission, to Samuel Harris & Sons, Exchange Brokers, or Robt. A. Taylor, Baltimore, Md. je.1-4t*

Sinclair & Co.'s Fanning and Separating Mills,

WITH LATE VALUABLE IMPROVEMENTS.



THE construction of our Fanning and Seperating Mills this season, combines all the late improvements, and by their present excellent arrangement increased speed of chaffing is attained, and the grain put in superior order for market or for seed. The arrangement of the works is also such that our Fans are emphatically

SELF-FEEDERS,

which with present extra motion, combined with a more correct direction of the wind, renders them rapid performers.

They have also the same superior finish and strength of material that distinguishes our machinery.

Price, $25, 30 a 35
Ditto with extre top and bottom screens, $29, 34 a 39

Fans at the last named prices, are made suitable for large or small wheat, and better adapted for the 2d process of cleaning and preparing wheat for seed.

je. 1 R. SINCLAIR, JR. & CO., 58, 60 and 62 Light street.

R. B. PORTER. J. F. TOWNER.

PORTER & TOWNER,
WOOL DEALERS,
AND
GENERAL COMMISSION MERCHANTS.

AGENTS for the sale of Rees & Hoyt's Patent Premium Riveted Stretched Leather Bands, Vulcanised Rubber Bands, Hose, Steam Pipe Packing, &c., Smiths', Braziers' and Founders' Bellows; Tinners' Tools and Machines; Wool, Warps, Bands, Cards, Soap, Oil, Leather, Cloth, Shuttles, Reeds, &c. Machinery of all kinds bought or sold on commission.

No. 342 Baltimore street, Baltimore.

Porter & Towner will always give the full market price for all description of WOOL, and solicit growers to give them a call before selling their Wool. je. 1-3t

BENJAMIN WILLIAMS,
Commission Merchant and Dealer in Wool,
No. 126 Lombard street, between Charles and Light street, BALTIMORE.

CASH and the highest market price paid for all descriptions of WOOL and DRIED SHEEP SKINS.

Wool and Country Produce received and sold on commission. Refer to—

Messrs. Duvall, Keighler & Dorsey,
" Duvall, Rogers & Co.
" Wm. Woodward & Co.
" Thos. Whitridge & Co.
" William Cooke & Sons,
" Ward & Brothers,
} BALTIMORE.
Mr. George Williams,
Messrs. J. D. & M. Williams,
Mr. John Williams,
} BOSTON.

je. 1-6t*

Pitts' Patent Premium Threshing Machines and Double Pinion Horse Powers,
For sale at Kerr's wharf, foot of Bond street,
FELL'S POINT, BALTIMORE, MD.

THE subscriber offers for sale the celebrated "PITTS' SEPERATOR." It is the same machine that has stood and now stands unrivalled by any machine for Threshing and Cleaning Grain in existence. It has been exhibited at State and County Agricultural Fairs in the United States and Canada, always receiving the *First Premium*.

The Horse Power, for strength, ease, durability and cheapness of repair, is unequalled. The driving wheel is six feet in diameter, driving two bull pinions, each receiving equal power. The bevel wheels driven by the bull pinions, connect with two pinions on the line shafts. Thus it will be seen this Horse Power is double the strength of any single geared power. It may be driven with from two to ten horses, depending upon the power required.

The above machines were built at J. A. Pitts' shop, Rochester, N. Y. and will fully sustain all that is claimed for them. Certificates of their superiority may be seen at the place of sale, and at the office of the American Farmer. Please address CHARLES MULFORD, Agent,
je. 1-2t* as above, at Baltimore, Md.

JAMES BAYNES, Wool Dealer,
Warehouse No. 105 Lombard st. near Calvert, Balto.

IS prepared at all times to give a fair market price for WOOL of all descriptions. He would recommend to farmers to be more particular in washing their Wool, and in getting it in good order before bringing it to market, to ensure them a fair price. The demand is good, and the probability is, that it will continue so the coming season. Those having wool to dispose of, are invited to give him a call before disposing of their fleeces. Any information as to putting it up for market, &c. will be freely given.

References—B. Deford & Co., and Wethered Brothers, Baltimore—Jas. Mott & Co., and Houston & Robinson, Philadelphia. Ap. 1-1yr

THE WOOL TRADE.—Baltimore ought to be, from its geographical position, *the* market of the country for wool—much of the Western clip will be, in a little while, brought to this city, and we are gratified to find that our dealers are taking the means to let the farmers know where they can find purchasers. We call attention to the advertisement of Messrs. Porter and Towner, old established dealers in this line, and to that of Mr. Benj. Williams, who also buys and sells this important staple.

AMERICAN FARMER.

BALTIMORE, JUNE 1, 1851.

☞ The adjourned meeting of the STATE AGRICULTURAL SOCIETY will be held on *Wednesday*, the 4th June, at 10 o'clock, at the Hall of the Society. A full attendance is very desirable]

NEW POSTAGE LAW.—The postage on the "*American Farmer*," will, after the 1st day of July, be as follows:

50 miles or less, out of Balt. Co., 5 cts. per annum.
Over 50 and less than than 300, 10 " " "
Over 300 and less than 1000, 15 " " "
Over 1000 and less than 2000, 20 " " "
In Baltimore county the postage is free.

THE WHEAT CROP.—Our accounts from nearly every section give assurance of an unusually fine yield of wheat the coming harvest, if no unusual casualty should overtake it before it is harvested. Much complaint is still heard about the loss of Tobacco plants, particularly in Ohio, and in Prince George's and the neighboring counties of our own State. The Hay harvest will be very good, from present appearances, and the Corn, tho' late, having had the benefit of fine rains during the past month, is now coming on pret' well.

The Crops.—A correspondent at Amelia C. H Va., writes us, under date of 12th May, that the Wheat looks well in his neighborhood, and wherever guano has been applied, is very fine. From every direction, we hear, that the guanoed wheat promises extremely well. There were enough tobacco plants in Amelia, and a large crop was aimed at. The Corn was all in the ground, and a good deal up and growing well.

Guano—Heavy sales have been made during the past month, with a tendency to advance—Peruvian could not be made now on quite as good terms, as last month—We are apprehensive that the supply will not equal the demand; the quantity in first hands is comparatively small—We quote: for 50 tons or more, $50.20 per ton of 2240 lbs.: 20 tons and less than 50, $47 per ton of 2000 lbs: less than 20 tons, $48 per ton of 2000 lbs.—Our opinion is, and we give it for what it is worth, that those who wish to obtain their supplies before the 1st of September, should engage at once.

Cow PEAS.—Peebles White, Davis & Co. of Petersburg, Va., it will be seen, has a supply of the Cow Pea for sale.

Kentish's Prepared Guano, is advertised in our columns. The pamphlet issued contains many recommendations of it—but the attestation of such a man as Dr. Bayne, is best of authority for us.

PITTS' THRESHING MACHINE, &c. has a high character at the North and West—An agency for the sale of it, it will be seen by the advertisement, has been established in this city.

GUANO—COMMISSION AGENCY.—Our readers in North Carolina, and in Virginia adjacent to Petersburg, Va. are referred to the advertisement of Mr. John Rowlett, who will, we have no doubt, be able to supply them with Guano, and other fertilizers, on as good terms as any other dealer in his section of the State.

HORTICULTURAL SOCIETY.—The weekly exhibitions of the Society are held on Thursday, between the hours of 10 and 12 o'clock. The display of flowers, fine fruits and vegetables, is very gratifying, and we invite the ladies and others who delight in such matters, to attend these exhibitions. We regret our inability to give a list of the articles presented, from time to time.

FINE STRAWBERRIES.—We received a jar of Strawberries raised by Gordon Forbes, Esq. of Westmoreland, Va. which were exhibited at the Horticultural Society's exhibition on the 22d ult. and pronounced by judges to be the largest, most perfect, and finest of the season, exhibited in this market.

☞ We are indebted to our friends Messrs. Toumey, Saml. and John Feast, Dove, Pentland & Brother, and others, gardeners and florists, for a variety of beautiful Bouquets of flowers, and various kinds of vegetables, which were on exhibition at the Horticultural Society's rooms.

FARMER'S GUIDE.—We are in the receipt of the 17th, 18th and 19th numbers of the above excellent work, which is drawing to a conclusion, only a few more numbers remaining to complete it. It is not often the case, but in this instance, more will be given than was contracted for. The work will contain 200 pages over and above what was promised,—and this will be furnished without additional charge. For such liberality Messrs. L. Scott & Co., the publishers, deserve thanks.

Gentlemen who desire to subscribe will do well to do so without delay, as under the *new law* the postage will be considerably increased on the 1st of July. Orders by mail should be immediately forwarded.

The 17th number contains the *Preface* from the pen of Mr. Stephens, and an *Appendix* to the Work, by professor Norton, of Yale College, both papers of great interest.

We have so often spoken in commendation of this standard work, that it is only necessary to say that the present numbers are equal to those which have preceded them. It can be had of Mr. N. Hickman, Baltimore, near North Street.

EARLY WHEAT.—On the 10th of May, some samples of wheat, just heading out, were left at our office; they were raised by Wm. H. Jones, Esq. of Somerset Co. Md. The Princess Anne Herald of the 6th, notices the reception of some heads of wheat raised by Saml. W. Jones, of the same county—this wheat is of the Mediterranean variety, and has an extremely healthy and vigorous appearance. These were the first samples of the season, in this State, that have come to our knowledge.

"*Desirous*" of St. Mary's county, is informed, that *Buckwheat* is better than oats for sowing to be turned in, for the reason that, owing to the structure of the leaves it derives much of its organic food from the atmosphere. We think, however, unless his corn was highly manured, he had better not sow anything on the land until the grain or the ears are entirely filled out. Grass seeds may very properly be sown on a lawn sowed with wheat—the sowing of the grass seed should be delayed until the succeeding spring after the wheat has been seeded. Ice-house will be attended to hereafter.

CAPON SPRINGS.—This new Southern Watering Place, it will be seen by the advertisement, will open 15th of this month—The Winchester Republican says that President Fillmore and Mr. Webster, and other members of the cabinet, are expected to visit the springs during the season. We expect to have it in our power to pay our respects to the constituted authorities of the nation at the Capon, and hope there to meet with many of our friends.

☞ Specimen Nos. and show bills will be sent to those wishing to subscribe or act as agents for the American Farmer, on application to the publisher.

Speculators and others are referred to the advertisement of Col. Ware, offering a desirable tract of land for sale.

REVIEW OF THE TOBACCO & GRAIN MARKETS.

Reported for the American Farmer by J. W. & E. Reynolds.

During the month of May the Tobacco market was more animated than it had been for several months immediately preceding, and considerable quantities of Maryland exchanged hands at prices much lower than were procured during last winter—We do not reccollect to have ever seen the market in so anomalous a state as it has been this year—and contrary to the anticipations of agents and planters, prices gave way in March last and gradually declined from that to the present time—When we take in consideration that the crops grown last year were remarkably short—the stocks on hand here and in Europe very light, we are confounded as to the cause of the depressed state of the market, and therefore will not attempt to assign a reason—The quality of the crop grown last year is inferior compared to that of the preceding year, which detracts from the value of it.

Whether Tobacco will advance this year or not we will not predict—under no circumstances, however, do we think good and fine qualities will give way in prices—nor can we see any reasons why other sorts should decline. The receipts have been pretty large up to to the present time, but will now fall off for a month or two.

We quote sales dark common frosted at $3½ to $4; sound leafy frosted, $4¼ to $4½; common dark and clear from frost, $5; middling, $5¼ to 5½; good brown, $6 to $6½, and good to fine red and yellow, $7 to $10.

Grain—White wheat, $1.05 to $1.10—Red do., 90 to $1—White corn, 59 to 60—yellow do., 57 to 58—Oats, 39 to 42c.

Wool—by James Baynes—The market has been rather languid of late, and to effect sales, lower prices have to be taken—still it is the opinion that prices will not recede to any extent—high prices have been paid for wool in the West by speculators, who are under the belief that manufacturers will come forward (at the present they show no inclination to do so, only buying for present use,) consequently are nnable to give a very accurate quotation:—¾ to full blood, 33 a 37½; ½ to ¾, 30 a 33; ¼ and common, 26 a 30; unwashed, 18 a 20.

Cattle, beef, $3.50 per 100 lbs. on the hoof, equal to $7 a $8.75 net, and averaging $4.12 gross—Hogs, live, $6 50 a $6.75 per 100 lbs., sales brisk—Whiskey, 22c. in hhds, and 23c. in bbls.—Cotton, inactive, middling fair Va. and Georgia, 9¾ a 11c. 6 mos.; Florida and N. Orleans, 11c. 6 mos. to 12c. cash—Hay, bale, $16, loose, $14 per ton; but little Timothy in market—Flax-seed, 140c. per bushel—Molasses, 21 a 23c. for clayed, and 25 a 27 for muscovado; P. Rico, 36 a 31; N. Orleans, 32 a 34;—Sugar, stock light, N. Orl. $4.50 a $6.25; P. Rico $4¼ a $7.

Eddy's one wheel wrought iron Horse Power.

THE most simple, durable and easiest draught Power in the world, for 3, 4, 5, 6 or 7 horses. It being made of wrought iron, there is no danger of its being broken or worn out by use. It can be taken down, or put up in ten minutes time, and easily transported in a one horse cart. It may be worked in the open field, or under cover, as the farmer may desire, and is one of the greatest improvements of the day.

We have enlarged and very much improved it since last season, and can recommend it to the farmers as a superior article, and one that we have not the least doubt they will highly approve.

For sale by E. WHITMAN, Jr. & Co. June1

McCormick's Improved Patent Virginia Reapers.

FOR sale by by E. Whitman, Jr. & Co. Price, $125. For further information refer to last month's American Farmer.

E. WHITMAN, Jr. & CO.,
je. 1 No. 55 Light street, Baltimore, Md.

CLIFTON FARM, IN CULPEPER COUNTY, FOR SALE.

THIS very desirable Farm, containing 640 acres, can be bought at private sale upon terms to suit the purchaser. In every respect is this farm desirable; it is fine for grass or grain; a fine stream of water passes through its mid-t, enough to run a mill, and an abundant supply in every field; a sufficiency of stone for fencing, with which it is partially enclosed, and an abundance of timber. The land lies well, and every foot of it will remunerate judicious cultivation. The buildings consist of comfortable houses for overseer and negroes, barn and other necessary out houses. It is within 6 miles of the Court House, within 1 of a mill and saw-mill, 1 of the Rappahanock Canal to Fredericksburg, and within 2½ of the contemplated depot on the rail-road from Oregon to Alexandria, now erecting, thus having the command of the markets in the District, Alexandria, Fredericksburg and Richmond, by two improvements, whose competition must be very important to the farmer—a healthy neighborhood and excellent society. If the farm is too small, land adjoining it may probably be bought; if too large, doubtless some of the neighbors would be glad to get portions of it; or purchasers can join and divide in three or more good farms. Arrangements can be made, probably, with the heirs, to purchase both the families of negroes on the farm, if desired—they are all valuable. Accommodation will be given the purchaser in every way to his satisfaction. Can any farm hold forth such inducements to purchasers? Mr. Wm. Glassell and Mr. John Glassell, living in the neighborhood, will show the farm to any gentleman wishing to see it. Any communication addressed to me at Berryville, Clark Co., Va., will receive prompt attention.

JOSIAH WM. WARE,
Executor of John Glassell, dec'd.
Clarke county, Va., March 18. June 1 2t.

BAMBOROUGH'S WHEAT FAN.

HAVING purchased of Mr. John Bamborough the Patent Right of his celebrated WHEAT FAN for the entire State of Maryland, with the privilege of selling in any of the States, we are now engaged in manufacturing a large number of them in the most substantial manner. This Wheat Fan has received *thirty-five first Premiums* from the different Agricultural societies, and is now the most popular farming implement in the United States. Persons wishing to procure those celebrated Fans, are cautioned to be careful of whom they purchase, as their great popularity has induced some dishonest persons to offer for sale Wheat Fans purporting to be the same as Bamborough's, which are entirely a different and inferior article, otherwise we should not suffer them to be manufactured and sold in Maryland, as we are the sole owners of the patent right. Therefore, persons wishing to obtain the Bamborough Fan, will readily see that, if they purchase elsewhere, they either get an article which infringes upon our right, and are liable for damages, or else the article is not the genuine Bamborough Fan; and as we have paid liberally for this patent, we shall enforce the law in all cases of infringement, and we trust that the farmers and planters will see the justice of our course, and in purchasing these Fans will be governed accordingly.

This Wheat Fan having taken the First Premium at the Maryland State Fair, in 1849, and by a rule of the Society it could not come into competition for the premiums at the Fair held by the Society in 1850, said rule expressly declaring that, "no article which had previously taken the highest premium of the Society, could again become a competitor for a premium of the same grade,"—yet the Society, at the Fair in 1850, gave it a still higher honor in a certificate, of which the following is a true copy:

COPY.

This is to certify, that at the Third Annual Exhibition and Cattle Show of the Maryland State Agricultural Society, held at Baltimore the 25th of October, 1850, by the report of the Committee of Judges, JOHN BAMBOROUGH was declared to be entitled to a Certificate of Pre-eminence over the first premium offered by said Society, viz: for his *Fanning Mill*.

Signed, on behalf of the Society, this twenty-fifth day of October, 1850.

CHARLES B. CALVERT, *President.*
SAM'L. SANDS, *Secretary.*

This Certificate having been given as above, gave second or third rate Fans on the ground, an opportunity to claim a premium, which, by the established rules of the Society, could not be refused them.

Farmers and others would do well to remember this fact, as they might be imposed upon in the purchase of inferior Fans, in the supposition that they were considered by the Society as worthy of its highest honors.

☞ Prices $30, $32 and $34.

E. WHITMAN, JR. & CO.,
je. 1 Baltimore.

Harvest Tools.

250 PREMIUM Horse Power and Threshers, 800 Bamborough Wheat Fans, 350 Horse, Hay and grain Rakes, 500 Grain Cradles, 350 dozen Hay and Grain Rakes. For sale by

je. 1 E. WHITMAN, Jr. & Co.

THE MORGAN BLACK HAWK,

THE property of CHARLES CARROLL of Doughoregan Manor, Howard District, Md., near Ellicott's Mills, was bred by the Messrs. Hills, Bridport, Vermont, and was got by the celebrated Horse Hill's Black Hawk.

The Hill Black Hawk was sired by the Sherman Morgan Horse, owned by Mr. Bellows, of Vermont; Sherman Morgan by old Justin Morgan; old Justin Morgan by true Brittain, or beautiful bay, which was taken from Gen. Delancy during the Revolutionary War, and run across King's Bridge. Hill's Black Hawk's dam was a three-quarter blooded English Mare, weighed 1025 lbs. could trot a mile in less than 3 minutes, and was in every respect a most perfect animal. For more minute particulars, see Cultivator, June, 1845, page 196.

The MORGAN BLACK HAWK'S Dam Peggy, is of a dapple brown color, of good size, and has often trotted a mile in less than 3 minutes. She was by the Woodbury or Burbank Morgan, he by old Justin Morgan; Peggy's dam was a Jet Black Morgan Mare, of good size, a very fast trotter. The dam of Bulrush or the Justin Morgan was a thorough bred mare, called Crazy Empress; she by American Eclipse, out of a thoro' bred mare.

By the above PEDIGREES, which are perfectly authenticated, it will be seen that the Morgan Black Hawk has seven or eight crosses of the celebrated Morgan stock, and is confidently believed to be the purest Morgan horse now living, and certainly combines all the high qualities of that stock, being a horse of great beauty, fine carriage, and great speed.

He stands at Doughoregan Manor, five miles from Ellicott's Mills, on the Frederick Road.

☞ TERMS—$35, pre-paid, without insurance, this includes all care and feed of the mare, until ℔ refusals of the horse.

☞ As he is limited in the number of mares, an early application is desirable. may1

To Farmers and Planters.

GUANO—GUANO—GUANO.—We are now receiving our supply of Guano, per ships Greyhound and Brooklyn, just arrived direct from Peru. This Guano is fresh weighed and inspected, and warranted pure and free from stone and other impurities.

We offer it in any quantities at as low prices, (greatly reduced from those of last season) and on as favorable terms as can be obtained in the city.—A liberal allowance made to clubs and parties buying to sell again.

P. MALCOM & CO.
Grain, Flour and Guano Warehouses,
Corner of Bowly's wharf and Wood st., Baltimore.

P. S. We have also constantly on hand Ground Plaster in bbls., Bone Dust and Lime.

Baltimore, 1851. mar 1

Farmers and Planters' Agency.

FROM the suggestions of a Pautuxent Planter, the undersigned has been induced to undertake the sale of all kinds of PRODUCE raised by the farmer, believing it to be the best plan that could be devised for the farming interest, and having an experience of several years in that kind of business, he flatters himself to be able to give general satisfaction, if prompt attention to business, good sales and quick returns can do it. For further information, he would refer to Jas. Patterson, & Co., Calvert street; E. Whitman, Jr. Light street; Godwin & Seth, Bowly's wharf.

WM. L. BATEMAN,
May 1. No. 61 south Calvert street.

Farmer's Agency and Commission House.

THE difficulty which farmers have heretofore experienced in getting into market many profitable articles of produce; as Poultry, Butter, Eggs, Vegetables, Fruits, &c., is now entirely removed by the establishment of an agency for the sale of ALL articles raised by the farmer.

This arrangement must prove advantageous to the producer, enabling him to obtain a remunerative price for his goods, instead of the meagre rates heretofore received through captains of vessels, who not having time to devote to them, were frequently compelled to sacrifice the interests of their owners. The undersigned having established such a house, refer the community to Messrs. Popplein and Thomsen, Mr. J. N. Palmer, Mr. Ezra Whitman, Jr., and Samuel Sands, Esq.—*Baltimore.*

All goods consigned to us will meet with prompt returns. LARKIN & CO.

Ap. 1 *No. 43 S. Frederick st., Baltimore.*

CHICKERING'S PIANOS.

THE Subscriber is *Sole Agent in Baltimore*, for the sale of CHICKERING'S CELEBRATED IRON FRAMED GRAND AND SQUARE PIANO FORTES, and is constantly receiving supplies from the factory in Boston, which are sold at the same prices as charged by Mr. Chickering.

Chickering's Pianos are unquestionably the best Instruments manufactured in the United States. In regard to superior quality of tone, touch, durability, and all the essential qualities of a Piano, they are admitted by the most eminent Pianists to be equal to Erard's, of Paris, or Broadwood's, of London.—Although there are several factories in Boston and New York of high reputation, Mr. Chickering undoubtedly stands at the head, possing eminent talent, skill, untiring industry and experience of some 35 years as a manufacturer of pianos, with abundant means to enable him to carry out his plans in producing the very best instruments.

Orders from the country, intrusted to the subscriber, either for Pianos, Music, or any article in his line of business, will be faithfully executed. F. D. BENTEEN,

jan1 6t* 181 Baltimore street.

BONE DUST.

THE subscriber will furnish ground Bones, warranted free from every mixture, *or the entire quantity forfeited*, at 50 cents per bushel, until the 1st of July next.—Also a second quality article, composed in part of Bones, and in part of Flesh of Animals, being a quick and powerful fertilizer, at 35 cts. per bushel.—Col. W. W. W. Bowie, the well known "Patuxent Planter," who receives his supply of bones from my Factory, says that the "bone dust at 50 cts. per bushel, was the best I ever saw."

Orders may be left at the "American Farmer" office, directed to me, or at the Factory below the Race Course, Canton, near Baltimore, will meet prompt attention.

None of my manufactured Bone Dust is sold except at my Factory. JOSHUA HORNER.

My second quality is a new article of manure; I commenced making it from reading that portion of Dr. Higgins' report, in which he advises farmers not to buy made up or compound manures, but to make their own, viz: to procure the offal of the slaughter houses, &c. and boil the same and mix it with their barn-yard manure—The article I offer to the public is made from the flesh of animals boiled, mixed with plaster and charcoal, to preserve the ammonia—lime, soda, and ashes, are also used in small proportions, in the process of manufacture—it is put up in pie, under cover, for 6 to 9 months, the whole mass is then mixed with an equal quantity of ground bones—There is no grand secret in this preparation—it is a substantial, quick and powerful manure, combining the durability of bones with the immediate action of guano, and hardly second to the latter, for insuring an immediate return for the investment. J. H.

I furnish to my customers, when bags are not sent, 2 bushel bags, at 6 cents each. may1-3t*

A. G. MOTT,
AGRICULTURAL IMPLEMENT MANUFACTURER,
No. 38 *Eutaw street*, near the Belair Market, Baltimore. Plows, Cultivators, Harrows, Wheat Fans, Straw Cutters, Grain Cradles, and all of the best and most approved Agricultural Implements in use.

☞ AGENT for the celebrated N. York Wiley and Empire Plow Castings. mar1

DOMESTIC ANIMALS AT AUCTION.

THE postponed yearly sale of FULL BRED SHORT-HORNS AND IMPROVED DAIRY STOCK, consisting of about fifty head, will come off at my farm on Tuesday, June 24th, 1851, at 12 o'clock, M. I shall dispose of all the improved Dairy Stock, which is composed of the finest Short horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which composed the improved Short-horns.

I am now breeding the Short horns, Devons and Ayrshires, each separately and pure, which, owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own County Society, (with the exception of last year, when I was not a competitor at either,) it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Dairy Stock. Several of the Bulls got by Lamartine will be of the most appropriate age for efficient service the coming season. All Cows and Heifers old enough, will be warranted in calf at the day of sale, by my Imported Bull "Lord Eryholme," or my celebrated Bull "Lamartine."

I own two thorough bred Devon Bulls; one the celebrated old Major, the other, one and a half years old, imported by me from Devon-hire. One of the above animals will be sold—which, I have not as yet determined.

A full Catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day.

I also have about 30 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to my imported Buck "Abraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this: in case they prove not to be so, it shall be optional with the purchaser, on his *certificate of that fact*, either to receive from me $25. (say twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give $25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm, at two weeks old.

Stock purchased to be sent a distance, will be delivered on shipboard or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing them throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivator of the soil, and to benefit the consuming country at large.

All communications through the Post, please pre-pay, and I will pre-pay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next. Persons wishing to view the stock at any time will find my superintendant, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 18[illegible] at Mount Fordham, Westchester County, eight miles from City of New York, by Harlem Railroad.

Ap. 1 3t L. G. MORRIS.

Postscript.—I decline selling any stock by private sale, so as to offer the public all the animals I have to part with, without having any previously selected from the herd, and all animals offered will be positively sold.

DUVALL & IGLEHART,
GROCERS AND COMMISSION MERCHANTS,
No. 78 LIGHT STREET WHARF,

Invite the attention of their friends, and the public generally, to their large and general assortment of GROCERIES, embracing every *article* in that line of business, and which they will sell upon pleasing and liberal terms, and at the lowest prices. Any one in want of any article in their line will find it to their advantage to give them a call. *They will also pay particular attention to the sale of all kinds of produce.*

New and Valuable Plants for the Nursery, Garden and Pleasure Grounds.

B. M. WATSON, Old Colony Nurseries, Plymouth, Mass., offers for sale a very complete assortment of PLANTS, including all those of recent introduction, consisting, in part, of Pear, Quince, Paradise, Mahaleb, Plum, Cherry and Apple stocks at lowest rates.

Young Trees, 3 to 5 feet high, mostly at from $5 to $12 per 100 of the finest deciduous sorts for nurseries or young plantations, and Evergreens, from seed, from 1 to 1½ feet.

Dwarf Pear, Apple, Cherry, Apricot and Nectarine Trees, in a bearing state, or nearly so, of the very finest sorts, at the usual rates.

Standard Trees of the same.

Strawberries, in 20 fine varieties, mostly at $1 per 100; Boston Pine, $1; Iowa, $2; Burr's New Pine, $2; Jenney's Seedling, $1.50; Richardson's Seedlings, 50 cts. per doz, very fine.

Ornamental Trees and Shrubs in great variety, including many new species, finely grown. Evergreen Trees and Shrubs and rare Pines in great variety.

Calestegia Pubescens.—This new Hardy Climber, lately introduced from China by Mr. Fortune, proves perfectly hardy in New England, having stood two winters in the ground here without any protection whatever. It is covered with delicate double rose colored blossoms all summer, and is the most brilliant and attractive flower of recent introduction. Plants $1 per pair—Tubers for 100 plants $5—for 50, $3, which will be sent by mail or express, at any time.

For bedding out, Verbenas, including Reine du Jour, Robinson's Defiance, Iphigenie, St. Margaret, and 20 others, $1.50 per dozen. Fuschias, Carnations, Scarlet Geraniums, Heliotropes, Chrysanthemums, Runners, &c. in great variety.

Priced List sent (post paid) on application. Carriage of all packages paid to Boston.

Plymouth, Mass. Feb. 14, 1851.

Orders for any of the above, received by the Editor of the American Farmer. Mar. 1.

AGRICULTURAL IMPLEMENTS.—LABOR SAVING MACHINERY.——*GEORGE PAGE*, Machinist & Manufacturer, Baltimore st. West of Schrœder st. Baltimore, is now prepared to supply Agriculturists and all others in want of Agricultural and Labor-saving MACHINERY, with any thing in his line. He can furnish Portable Saw Mills to go by steam, horse or water power; Lumber Wheels; Horse Powers of various sizes, ranging in price from $85 to $200, and each simple, strong and powerful. His *Horse Power & Thrashing Machine*, he is prepared to supply at the low price of $125 complete; the Thrashing Machines without the horse power, according to size, at $30, 40, 65 and $75; Improved Seed and Corn Planter Portable Tobacco Press; Portable Grist Mills complete, $165

Caution against Piracies on PAGE'S CIRCULAR SAW MILL

HAVING been informed that certain persons, without any authority from me, have been manufacturing my *Improved Portable Patent Circular Saw Mills*, and fraudulently selling the same to divers persons, *for use in the States of North Carolina, South Carolina, Georgia, Alabama, Louisiana, Florida, Texas, Mississippi, Kentucky, Ohio* and *Pennsylvania*, this is to caution all persons residents of said States, from purchasing said Mills from any other person than myself for use in either of the before mentioned States, as I shall prosecute all such offenders. My agents will forthwith report the names and residences of all such offenders to me, as I may take measures to prosecute them.

GEORGE PAGE, Inventor,
Patentee and Manufacturer.

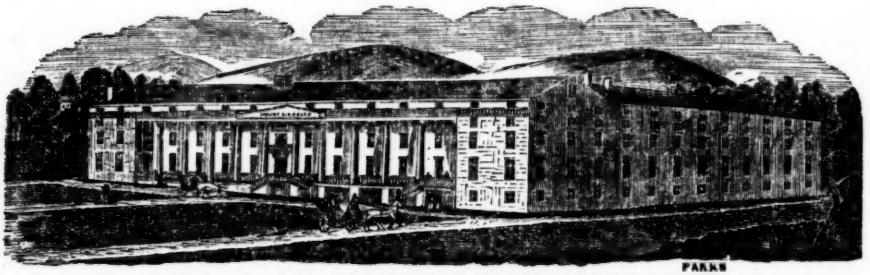
Baltimore, Md., April 1, 1851. Ap. 1

J. T. WATKINS,
FEATHER BEDS,
CURL-HAIR MATTRESSES,
FURNITURE AND VARIETY STORE, &c.
No. 47 South street,
Between Lombard and Pratt street,
Ap. 1-1yr *BALTIMORE.*

A. E. WARNER, No. 10 N. Gay st.

MANUFACTURER OF SILVER WARE, FINE GOLD JEWELRY, and importer of BEST SILVER WARE, FANCY ARTICLES, &c. would respectfully invite the attention of those in want of any of the above articles, that he keeps always on hand, and makes to order, every variety of Silver Ware, fine Gold Jewelry, and best quality Silver Plated Ware, which he will sell on the most accommodating terms. Feb. 1-tf

CAPON SPRINGS.



MOUNTAIN HOUSE, CAPON SPRINGS.

THE proprietors of the "Mountain House" at this popular "Watering Place," have now completed their improvements on an extended scale: the furniture is entirely new, and the rooms spacious and well ventilated. The Bath establishment recently erected, is the property of the State of Virginia.—It is about 300 feet long, has all the modern improvements, with cold, warm, shower and plunge baths; a dressing room is attached to each bath, and it is altogether a magnificent building of its class, not equalled in this country—nor is it surpassed in Europe.

The recent costly and extensive improvements, the well known medicinal properties of its waters, and the delightful atmosphere of its mountains, combine to render Capon Springs one of the most pleasant, as well as the most healthful, summer retreats in the Union. The citizen of the South will here find, what has been long wanted, a *Southern* watering place of the *first class*, convenient of access, where he can spend his summer months, free from the *unpleasant annoyances so frequently experienced of late years*, at similar places in the North.

The appointments of the house will be under the superintendance of competent persons in all the departments.

There is an abundant supply of Ice secured for the season. A superior Band of Music is engaged, and will be in attendance. Billiard and Bowling Saloons are now completed; also Shooting Gallery and Archery.

ROUTE—Visiters leaving in the morning train of Baltimore and Ohio R. R. Cars, dine at Winchester and arrive at the Springs for tea.

☞ An arrangement has been effected with the different lines, by which the citizens of Baltimore and Southern Virginia, can procure "*through tickets*" to Capon Springs, from Baltimore, Richmond, Norfolk, Fredericksburg, and the District cities, at prices much reduced on former rates. The exact prices from each point will be made known through the newspapers in due season.

The house will open on the 15th of June next.

THE PROPRIETORS.

Capon Springs, Hampshire Co. Virginia. may1-3t

LIME—LIME.

THE undersigned having purchased of E. J. Cooper the most extensive Lime Burning Establishment in the State, is now prepared to supply Agricultural and Building LIME, of superior quality, to farmers and others, on accommodating terms, from his Yard, at the *City Block*, or delivered at the several landings on the Chesapeake Bay and its tributaries, and pledges himself by strict attention and punctuality, and a determination to do justice, to merit a liberal share of patronage. Any orders addressed to him through the Baltimore Post Office, or left with C. W. BURGESS & Co., No. 60 South street, one door above Pratt, will be promptly attended to.

Feb. 1-1y* JAMES L. SUTTON.

BONE-DUST AND POUDRETTE ESTABLISHMENT.

On Harris' Creek, at Canton, Baltimore.

THOMAS BAYNES, continues the manufacture of *POUDRETTE*, and is prepared to supply any orders for the same—The article manufactured by him, will be found probably more valuable than any made in the Eastern cities. His *BONE-DUST* weighs from 55 to 60 lbs. to the bushel, and is as fine as any article sold in this market. Price of Bone Dust, 60 cents per bushel. Poudrette, $1.12 per barrel. Persons sending their carts or wagons to the factory, can obtain the Poudrette at 20 cents per bushel.

Orders left with S. SANDS, at the office of the American Farmer, will be attended to.

GUANO! GUANO!!

1200 TONS PERUVIAN GUANO, landing from ships Edward Everett and Medford.

500 tons Patagonian, part equal to any ever imported into the United States. Also, 1000 bbls. Baltimore city ground Plaster. For sale on the best terms, by

S. FENBY & BRO.,

Mar. 1. Corner of Gay and Pratt sts. Baltimore.

GUANO—GUANO.

500 TONS PERUVIAN GUANO, direct importation, and *warranted equal in quality* to any in the market. The Guano is put up in good strong bags, and is in fine shipping order. For sale in lots to suit purchasers, at the lowest market rates, by

WM. ROBINSON, No. 4 Hollingsworth st. near Pratt st. wharf, Baltimore, Md.

Also, PATAGONIA GUANO, BONE DUST, Building and Agricultural LIME, for sale on the best terms. je. 1-tf

Leached Ashes,

OF THE BEST QUALITY, warranted genuine and unadulterated, for sale in quantities by

GRISCOM & BURROUGHS,

Ap. 1-6t* City Block, Fell's Point.

LIME.

THE subscribers are prepared to furnish Building and Agricultural Lime at the depot on the Back Basin, corner of Eden and Lancaster-sts., which they will warrant to give satisfaction, it being burnt from pure Alum Lime Stone, equal to any found in the United States. Orders may be left with WILLIAM ROBINSON, No. 15 Hollingsworth-street, near Pratt.

ft **PELL & ROBINSON**, City Block.

Oil Vitriol, or Sulphuric Acid.

THE undersigned, being largely engaged in the Manufacture of *Oil of Vitriol*, is prepared to furnish it to farmers for *dissolving bones*, put up in strong Carboys, at lowest price for cash or town acceptances.

P. S CHAPPELL,

Feb. 1-tf. No. 158 Lombard street.

Whitman's Sweep or Lever Power.

THE above cut shows the simplicity of this machine; and with its recent improvements works with more ease than any other Sweep Power, and is found to be strong and durable, and gives satisfaction to all who prefer the Lever Power. Price $100. For sale by
E. WHITMAN, JR. & CO., 55, corner of Light and Pratt streets.
je. 1

DRILLS---DRILLS.

OUR success in the sale of Wheat Drills last season, and the universal satisfaction which they gave in their performance, will cause others no doubt this season to wake up in this matter, who will be out with long puffs and certificates of the merits of their new Drills. But farmers will do well to bear in mind that among the great variety of Wheat Drills introduced into this State, Pearson's, and the Messrs. Pennock's Drills, are the only ones which have been used successfully—both of which are for sale by

E. WHITMAN, JR. & CO.,
Corner of Light and Pratt streets, Baltimore, Md.

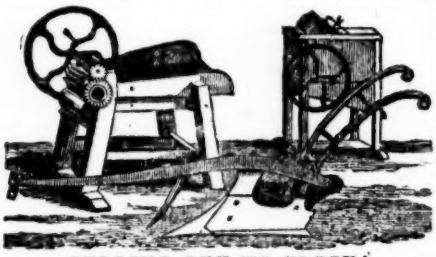
je. 1

COW PEAS.

WE have for sale, 1000 Bushels COW PEAS, which we offer in lots to suit purchasers. Orders for them will receive prompt attention.

PEEBLES, WHITE, DAVIS & Co.

Petersburg, Va., May 17, 1851. June 1 1t



SELLING OFF TO CLOSE!

A STOCK OF

AGRICULTURAL IMPLEMENTS

Amounting to $10,000,

TO BE SOLD AT GREAT SACRIFICE.

THE undersigned having determined to change their entire business, would call the attention of Farmers, Gardeners and Dealers, to their extensive stock of Agricultural Implements, which they will dispose of on the most reasonable terms for cash, with a desire of a speedy close.

The Implements consist, in part, of Horse Powers and Thrashers; Wheat Fans, a superior article—took the First Premium at the late annual Fair;—Straw Cutters, various kinds and sizes, consisting of Cylindrical Box, which is too well known for us to speak further—the Raw Hide Repeating, or the Boston Box, suitable for cutting straw or hay; Corn Shellers of all kinds; Ploughs of every kind, suited for the different varieties of soil. Our stock of the latter is very large, numbering upwards of 600, which we will close out at much reduced rates. Also, Churns of an endless variety, with Shovels, Forks, Cradles, Briar Hooks, Apple Pearers, Sausage Cutters and Fillers, together with a general assortment of articles suited for the farmer. Home Seeds from the Shakers' Gardens, N. York, celebrated for their freshness, &c.

We will also dispose of an elegant STEAM ENGINE, Turning Lathes, Circular Saws, Drilling Machines—together with an elegant Brick Shop, making everything complete for manufacturing purposes. The agricultural community will please give us a call before purchasing elsewhere.

No. 97 NORTH PACA ST., near Franklin.

For the accommodation of those having water communication with the city, we will have an office on BALDERSTON STREET, near Light, where we will be happy to receive all orders, and promise to give punctual attention.

mar 1 HAMBLETON & DIDIER.

C. H. DRURY, *Hollingsworth street corner of Pratt—Head of the Basin*—having completed his establishment with Foundry connected, for the making his own Castings, is prepared to furnish all varieties of *AGRICULTURAL IMPLEMENTS* and *CASTINGS*, made to pattern of the best material.

The following is a list of PLOWS kept constantly on hand: Davis, of the different numbers, for wrought and cast shears, S. & M., Chenoweth, Wiley, 2 and 3 furrow, No. 0, Hill side, No. 1 and 3 Connecticut—Beach Improved or Posey Plow, with common Davis cast shear—Self-sharpener or wrought shear—Corn Cultivators, plain and expanding—Tobacco do.—Wheat Fans—Corn shellers with double hopper—Old Vertical and Virginia sheller—Harrows—superior Pennsylvania made Grain Cradles—Revolving Horse Rakes—Cylindrical straw Cutters, &c. &c. Horse Power *GRIST MILLS*, a very useful and saving article, and coming into general use. *HORSE POWER AND THRESHING MACHINES*, of these I need not say any thing, as wherever they have been in use any time, they are preferred to all others.

C. H. D. will this year make a smaller size Power & Thresher, (price of Power, $100, Thresher, $50, Band, $10, or when taken together, complete, $150 cash.) Persons in want of Implements made of the best material, and put together in the strongest and best manner to answer the purpose for which they are intended, are invited to call on the subscriber. jel

PIGS—By Russian Boar and Chester Sow.
Do By Leicestershire Sow and same Boar. For sale 10 per pair by
y1 EMORY WOOLFORD, At Sinclair & Co's.

AGRICULTURAL IMPLEMENT DEPOT

And Produce Store,

No. 95 LIGHT STREET WHARF,

And in front of the small wharf where the Hugh Jenkins, Cambridge and other steamboats start from daily.

TO facilitate and render this business more convenient for his customers and himself, the subscriber has taken a convenient and commodious Warehouse in Baltimore, as a depot and sale place for all the various Agricultural Implements manufactured at his shops in Carroll County; also, to sell the products of his Farms, Mill and Foundry.

The following articles of his own manufacture and produce, he will endeavor constantly to have there for sale, viz:

HORSE POWERS { Endless Chain or Tread, for 1, 2 or 3 horses. Levers or 2, 4 or 6 horses.

THRESHERS { With Seperator and Fan attached. With Seperator only. Without Seperator.

Wheat Fans, Corn and Cob Crushers, Corn Shellers of various kinds, (very superior;) Cutters for Hay, Straw and Fodder, (Richardson's patent;) Cornstalk Cutter and Grinder, (a new and the best article now in use;) Horse Rakes; Smut and Garlic Rubbers, (which is unequalled for its simplicity of structure and thorough operation on Wheat or Buckwheat;) Clover Seed Hullers; Ploughs of several kinds, but only such as are known to do the best work; Harrows and Cultivators, and various smaller Implements for Garden and Field use.

Will be received in a short time a supply of Mumma's patent CONCAVE CYLINDER CORN SHELLERS, either for power or hand. It received at the late Fair in Balt. the first premium over all others. The peculiar structure of the Cylinder, allows it to take the ear grains off the cob cleaner than any other machine, also separating the shelled corn and cobs. I have the entire right for Carroll and Baltimore Counties and city. I will also furnish to right holders, these machines at wholesale, put up in a superior manner, and at fair rates.—I have also the Vertical Cylinder Corn Shellers, (all cast Iron and of great strength) which will shell 100 bushels per hour.

The subscriber would now respectfully call prompt attention to the securing for the ensuing harvest, (which promises to be very heavy) a Horse Power and Threshing Machine, either with or without Cleaner, which for *simplicity* of arrangement, *superior* structure and materials, and *cheapness* of price, have never been equalled in this market.

Having myself had long practical experience as a farmer, added to my country facilities of *best wood, water power* for *saw mill*, and shops and foundry, &c., the best and cheapest accommodation for workmen and their families, I am thus enabled to furnish our articles, of every kind, on terms to suit the low prices of produce. I am now getting ready a stock of implements of almost every kind used by the best farmers, which they will find here, or they can be sent on from my Factory, at short notice.

N. B. Address me in Baltimore, or at my residence, New Windsor, Carroll Co., Md.

May 1 JAS. C. ATLEE.

Seed and Agricultural Warehouse,

NO. 29 MARKET STREET, PHILADELPHIA,

WHERE the subscriber has on hand an extensive assortment of GRASS and GARDEN SEEDS of his own raising or recent importation, and warranted to be as represented.

He is also manufacturing all the most approved

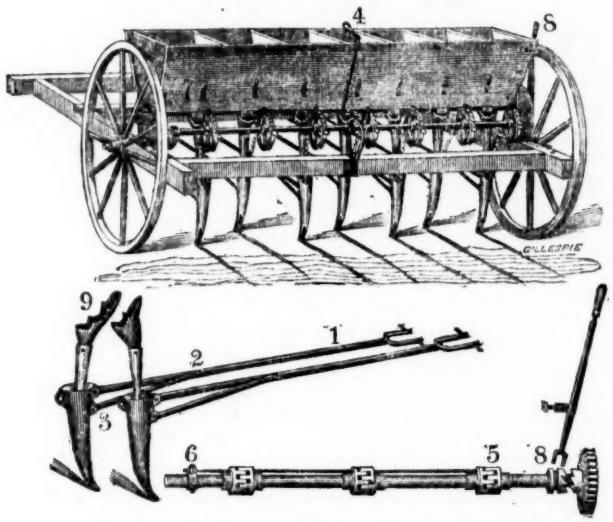
AGRICULTURAL IMPLEMENTS,

amongst which he would call the attention of farmers to a NEW ARTICLE OF PLOWS, of his own invention, the Cast-steel Extending Point *Self-Sharpner Surface and Subsoil* PLOWS, which for durability and ease of draft, is yet unequalled. The great advantages these Plows possess over all others, are their peculiar construction, and the substitution of cast steel in the place of cast iron, which only wants to be seen to be appreciated.

He has all Fruit and Ornamental TREES, GUANO, POUDRETTE, BONE DUST, SODA, and all the most approved Chemical Fertilizers, which will be sold on the lowest prices by

May 1-2t C. B. ROGERS.

SINCLAIR & CO.'S PATENT WHEAT DRILL,
WITH VALUABLE IMPROVEMENTS.



THE above Fig. represents our Patent Wheat Drill, and the same (with late improvements) as that exhibited last November at the Talbot Co. Agr. Fair, and which contested successfully for the *First Premium* against several similar machines from Delaware, Pennsylvania and N. York. The present construction is equally simple and more durable, and possesses the advantage of improvements and additions which experiments of last year have suggested. The tines (3) being arranged *angular* and hung on the swing principle, prevents the machine from choking with grass, *corn roots*, &c., and allows them to rise or fall according to the grade of the land. By the lever (4) and chains to each tine, one, a portion, or all, may be thrown up instantly; also, by the slides, (7) either or all the cylinders may be prevented from acting at pleasure, or the entire cylinder shaft thrown out of gear by operating on leaver (8, 8.) The receivers (9) are so arranged that the driver can observe the grain falling from each cylinder, which advantage, with the hoppers being equally divided, insure a certain check against irregular seeding. The brace (2) is attached to the tine by a wooden pin—intended to break when the tine comes in contact with fixed roots, &c.: new pins are provided for replacing the same; also on top of same brace three holes are made in the swinging or main lever, (1) which allows the tines to be set less or more inclined, and intended to give more or less depth of furrow. The cylinders (5) are in two parts, and separated or closed by two pinch screws (6) attached to an iron rod, which allows the cups to be formed to any and uniform size, and to drop any desired quantity of wheat per acre. The ends and bottom of the hopper are of iron, accurately adjusted, which prevents derangement of the works, consequent to shrinkage, that wood is subject to. The machine may be worked by 2 or 3 horses—if for the former, a pair of shafts will be necessary. Directions will be furnished with each machine relative to management. Price $90.

je. 1 R. SINCLAIR, JR. & CO.

THRASHING MACHINERY.

THE entire success of our Thrashing Machinery the last season, and the consequent demand, has induced us to make a much larger number than usual for the coming crop, which is expected to be unusually large. Those wishing Machines, by giving timely notice, will be furnished with our best patterns, and warranted.

The following set is generally preferred:

Lever Power, No. 2,	price $100
Thrasher, 25 inch,	.50
Straw Seperator, 25 inch,	18
Driving Band,	10
	$178

Also, Lever Powers of *extra capacity*—price $135.

Rail-way or *Endless Chain* Powers, for one and two horses, *latest improved*—$75 a 100.

15, 20 and 60 inch Thrashers—$35, 40 a 60.

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☞ The North Carolina Star, at Raleigh, and the Lancaster, Pa. Intelligencer, will publish the above four times, and send bills as above. May 1-5t

HUSSEY'S REAPERS.

THE subscriber deems it due to the farming public, that the following testimonials should be laid before them—the prospect of the wheat crop, at this time, renders it probable that much difficulty will be experienced in saving it, and he would particularly refer to the facts stated by some of the signers, (respectable Western farmers, most if not all of whom had used Reapers made by others) that *lodged Wheat* could not be harvested except by means of his Reaper—and that the delay and disappointment caused by other machines getting out of order, was not experienced by those who used his. The letters in the possession of the subscriber testifying in behalf of his Reaping Machine, and of its superiority over all others tried, in Maryland, Virginia, and the West, are too numerous for publication, but will be shown to those gentlemen wishing to obtain such a machine, on application to him in Baltimore.

OBED HUSSEY.

Franklin Precinct, DeKalb Co., Aug. 13, 1849.

This may certify that we have seen Mr. O. Hussey's machine cut about an acre of wheat, so badly lodged that McCormick's Reaper could do nothing with it, nor could it be cradled. Said Hussey's machine cut it handsomely, and laid it in very good bundles for binding.

JOHN SCHOOMAKER, DANIEL MILLER,
ALBERT FIELD, ALBERT FIELD, Jr.,
JOHN M. SCHOOMAKER, ISAAC CRILL,
JOHN MILLER.

Berkshire, Kane county, Ill., Aug. 6, 1849.

We, the undersigned, having seen Mr. Hussey's Reaper work at cutting grass and grain, think it preferable to McCormick's or any other machine that we have seen. It cut wheat that could not be cut with McCormick's Reaper or a cradle. We are well acquainted with McCormick's machine.

P. A. HIXBY, DAVID SHANKS,
JOHN GRIGGS, Jr., ABRAHAM SHIRWOOD,
JOHN GRIGGS, JAMES HESS,
HARRY POTTER, ALSON BANKER,
JOHN SHIRWOOD, D. C. WRIGHT,
SETH SHIRWOOD, ELISHA WRIGHT.

Oswego, Ill., Aug. 2, 1849.

This may certify that I cut a lot of Black Sea Wheat with Mr. O. Hussey's Reaper: the wheat was so badly lodged that no McCormick Reaper or Cradle could cut it; Mr. Hussey's Reaper cut it clean and laid the bundles out of the track in good order for binding. I have seen the work done by this machine in grass: it was as good work as ever i saw done by a scythe, or better. For my choice I should rather have my grass cut by the Reaper than by the scythe. Every farmer ought to have such a machine, and every farmer I hear talk about it says the same. PHILIP YOUNG.

For other certificates, see last "Farmer."

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Virginia Corn Sheller—Bush or Root Puller
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Whitman's Premium iron cylinder Thresher
Goldsborough's patent corn Sheller and Shucking Machine
Sinclair & Co's Plow, with subsoil instrument attached
Smith's Spiral or Columbiad Corn Sheller—Subsoil Plow
Green's Straw Cutter—Barring Plow—various Plows
Whitman's wrought iron railway Horse Power and Thresher
Prouty & Mears' centre draught Plow—Horse Scoop
Wood's, or Freeborn Plow—Garden Vase—do chair
The Bogardus Horse Power—Garden Engine,
Vegetable Cutter—Horticultural Tool Chest,
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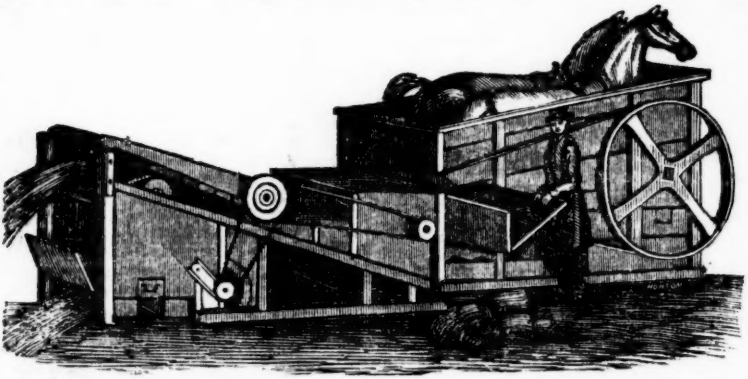

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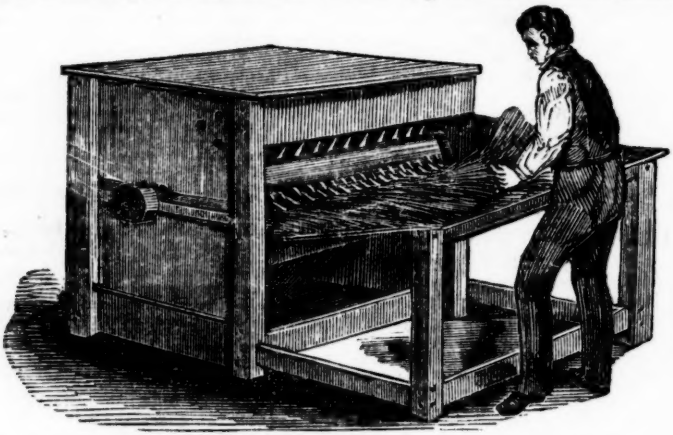

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